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VETERINARY MEDICINE

4753 GRAND BOULEVARD, CHICAGO

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VOL. XX No. 7

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Veterinary Medicine

VOL. XX JULY, 1925 No. 7

PRIZE WINNERS FOR JULY

1st Prize, H. C. Groff, Cushing, Okla.
2nd Prize, Ralph W. Balkam, Springfield, Mass.
3rd Prize, John W. Brown, Ft. Scott, Kan.
4th Prize, G. W. Browning, Mobile, Ala.

Forty-eight manuscripts were received and entered in the July contest, covering an unusually wide and interesting variety of subjects. Space does not permit the publication of all of them in this issue, but the rest will appear in early numbers.

Dr. F. B. Hadley, Professor of Veterinary Science, University of Wisconsin, acted as judge. Doctor Hadley is well qualified for this work, being a teacher and author as well as deeply interested and closely in touch with the activities of practitioners.

The awards were as follows:

First prize: Fifteen dollars to Dr. H. C. Groff, Cushing, Okla., for his report on rabies in cattle.

Second prize: Eight dollars to Dr. Ralph W. Balkam, Springfield, Mass., for his discussion of castration of colts in the standing position.

Third prize: A yearly subscription to Veterinary Medicine to Dr. John W. Brown, Ft. Scott, Kan., for his report on pre-parturient paresis.

Fourth prize: Two dollars to Dr. G. W. Browning, Mobile, Ala., for his discussion of thuja in the treatment of warts and tumors.

In placing these awards, Doctor Hadley made the following comments and suggestions:

"The wide variety of subjects covered in these essays made them far from comparable, so it was difficult to determine an equivalent basis for evaluation. However, with the aid of three colleagues, viz., Drs. B. A. Beach, B. L. Warwick, and E. M. Gildow, we have finally decided upon the four that are most outstanding. The awards this month, therefore, represent the judgment of four veterinarians.

"It should interest the contestants to know what standards we had in mind when evaluating their manuscripts. Briefly these were the following: timeliness of subject; clearness in description; logical arrangement of material; sufficient evidence to justify conclusions; and helpfulness to others.

"In contrast to the desirable points just mentioned, it may be helpful for those who are planning to prepare papers for future contests to take note of the following criticisms which we made after reading the papers; too many 'I's'; too stereotyped; carries no lesson; report made before final outcome of case was known; too much guess work in the diagnosis; not enough evidence to support conclusions; failure to comply with the stipulated requirements of the contest; subject not new or especially interesting.

"To aid future contributors, I suggest that essays be submitted on poultry diseases, as the veterinarian is now often consulted about poultry pathology problems, so should welcome the opportunity to read the experiences of other practitioners in this new field."

THE CONTEST FOR AUGUST

In addition to the regular prizes, we are renewing our offer of a copy of the new second edition of "Veterinary Prescriptions," or a copy of the new edition of Hall's "Diagnosis and Treatment of Internal Parasites" to everyone submitting a report or discussion. You do not have to wait for the decision of the judge to get one of these books. The receipt of your report for the August contest will entitle you to a copy, which will be mailed at once.

The regular prizes are as follows:

First prize of $15.00 for the most valuable discussion.

Second prize of $8.00 for the second most valuable discussion.

Third prize, a yearly subscription to Veterinary Medicine.

Fourth prize, $2.00.

The conditions of the contest are given in detail in the June issue.

The contest for August closes July 10th. We urge readers to participate in it. Write up and send in your interesting experiences of the past season while the details are still fresh in your memory.

A NEW HOOKWORM CURE

A new and highly efficient cure for hookworm was described before the recent meeting of the American Society for Tropical Medicine by Drs. Maurice C. Hall and J. F. Shillinger, of the U. S. Department of Agriculture. Dr. Hall is the discoverer of the use as a hookworm remedy of the common cleaning fluid carbon tetrachlorid, which has largely replaced the chenopodium oil formerly used. His new discovery is known as tetrachlorethylene. It is somewhat more complex in its chemical structure than carbon tetrachlorid, but basically it is somewhat similar to it.

The advantages which Dr. Hall claims for the new remedy, as compared with carbon tetrachlorid, are equal effectiveness and greater safety. One spoonful of the older remedy, followed by Epsom salts, commonly suffices to clear up an ordinary case of hookworm. The new treatment requires a dose only two-thirds as large. The factor of safety, Dr. Hall says, seems to be very large. Heavy overdoses may cause illness, but in his experiments with dogs he has given as much as one hundred times the curative dose before the animal was killed. In regular medical and veterinary practice, of course, no such overdose would ever be given.

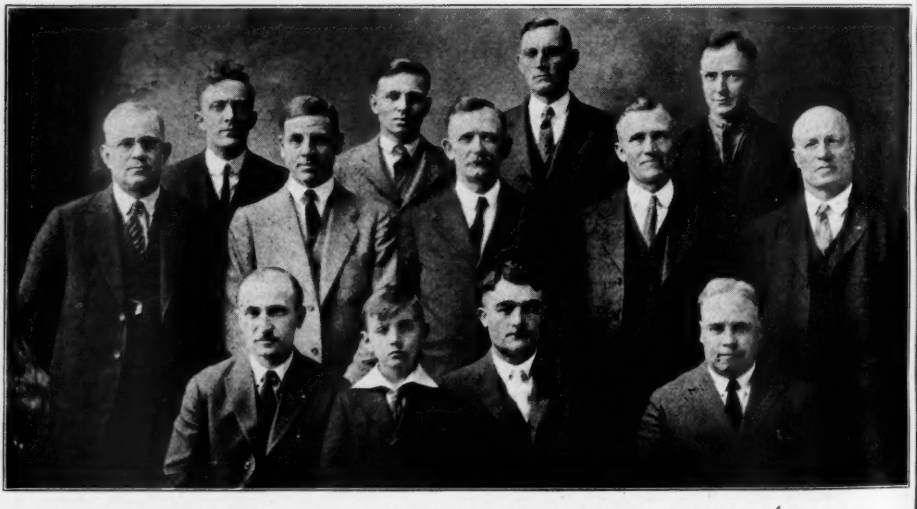
At the rate of progress made since 1920, it will take about 85 years for whole-time rural health service to be extended to all communities of the United States in which such service is needed.

Reasonably adequate whole-time rural health service throughout this country would cost about $20,000,000 a year, and, through the prevention of sickness, death, and loss in earnings, would effect a saving to the people of over $1,000,000,000—or a net saving every year of over $980,000,000.

T. B. SCANDAL IN NEW YORK

Dr. S. R. Howard of Hillsboro, Ohio, has sent in a copy of The Rural New Yorker of June 6th, which contains some serious revelations regarding the traffic in condemned tuberculous cattle in Cortland county, New York. In an editorial an investigator is quoted as giving the following explanation of how it was done:

"The racket seems to have been worked in this way. After the State's appraisal, a dealer appears and buys the good lookers. They are branded and ear-tagged, of course. He removes them to his farm, removes their ear tags and places these in the ears of some old skates that he is in possession of. Then he takes his



Committee on Local Arrangements for the A. V. M. A. Meeting at Portland, Ore., July 21st to 24th. From Left to Right:. Back Row—Dr. T. B. Carter, Portland, Ore.; Dr. Otto J. Ruehle, Portland, Ore.; Dr. E. E. Wegner, Pullman, Wash.; Dr. Geo. W. Staggs, Chehalis, Wash. Middle Row—Dr. R. A. Button, Tacoma, Wash.; Dr. W. H. Lytle, Salem, Ore.; Dr. Carl Cozier, Bellingham, Wash.; Dr. W. B. Coon, Forest Grove, Ore.; Dr. E. E. Chase, Portland, Ore. Front Row—Dr. J. W. Kalkus, and Master Kalkus, Puyallup, Wash.; Dr. R. J. Donohue, Yakima, Wash.; Dr. Hall, B. A. I., Portland, Ore.

own little branding iron and brands these skates. When the State inspector orders him to bring out his purchased reactors for slaughter, these old skates amble gently into the ring, have their ear tags read, their color observed and their face brand noted. Everything checks up properly and the old skates die nobly for their fairer sisters, who are now disposed of at good prices to more or less innocent farmers. Of course these fair ones are branded, some of them very, very lightly (crooked veterinarians), some very plainly (honest veterinarians). In the hands of a lot of farmers you can find a lot of them branded very plainly, but they don't wear veils, anybody can see them, and, take it from me, some people who wish they hadn't, have seen them."

It is generally conceded that there are better times for beef producers in the United States. There were approximately two million less beef cattle in the United States on January 1, 1925, than there were on January 1, 1924. It is probable that the low price in the cycle of beef cattle was reached in 1924, and that the price will gradually increase.

YEAST IN THE TREATMENT OF BLACK TONGUE

Drs. Joseph Goldberger, G. A. Wheeler, W. F. Tanner, Surgeons in the United States Public Health Service, have published a report of their investigation in the use of yeast in the treatment of pellagra, in which they say:

"We were led to test the action of yeast in pellagra by reason of some very favorable indications afforded by tests of this preparation in experimental black tongue in dogs. We would now state that in the treatment of this experimentally induced disease a dose of 15 to 30 grams (one-half to 1 ounce), depending on the weight of the animal, has been found very efficient in cutting short an attack. However, the treatment must be begun relatively early; if delayed until after the dog's temperature has risen to 40° C. (104° F.), the outlook is much less favorable. We would recommend this treatment to veterinarians for trial in the spontaneous disease.

The dry powdered yeast (well dried) keeps well and retains much if not all of its pellagra-preventive and therapeutic activity for some weeks at least. It may be administered in a variety of ways. In pellagra we have, for the most part, given it in ordinary table sirup; less frequently in canned tomato juice, and in milk. In black tongue we have given the yeast in gelatin capsules (veterinary No. 13). It may be stirred into the food as soon as the animal begins to eat.

The beneficial effects of the yeast treatment have repeatedly been recognized by us as early as the end of the second or third day after the treatment was begun in both the human and the canine disease."

THE AUSTRALIAN VETERINARY JOURNAL

The Journal of the Australian Veterinary Association is the name of a new quarterly veterinary publication launched at 56 Bridge St., Sydney, Australia.

The first issue of the magazine contains 32 pages and the price is set at 10 shillings, or approximately $2.50 a year.

The publication is well edited and will, without doubt, be very interesting to the profession in Australia. However, the problem of the publishers in financing the publication, high as the subscription price is, is going to be a very difficult one. That the publisher realizes this, is shown by the following excerpt from one of the articles in the first issue:

"In the year 1920 Australia possessed 2,416,000 horses, 13,500,000 cattle, 77,898,000 sheep, and 764,406 swine, while the United States of America had in 1922, 20,805,000 horses, 67,464,000 cattle, 36,499,000 sheep, and 60,000,000 swine.

"The United States of America has recognized the value of science in agriculture probably more than any other country. In order to protect its animal industry it has 12,000 veterinarians in private practice and government employment. In Australia there are only approximately 170 veterinarians. In the former country there is one veterinarian for every 15,000 animals of the species mentioned. In Australia there is one veterinarian for every 550,000 animals. On the basis of animal population the United States employs 36 veterinarians where Australia employs one. In the United States the Bureau of Animal Industry has a personnel of over 5,000 employees, approximately one-third being veterinarians. It is recognized as the greatest animal disease fighting machine in the world. It protects an industry valued at ten billion dollars and has made the United States the safest country in the world for the investment of capital in live stock.

"I think we can all agree that our friends in America are keen business men, that they are very quick to take up anything that will show a good profit, and if they find it pays to employ

or support one veterinarian for every 15,000 animals it seems fair to assume that Australia must be losing something by having only one veterinarian to over half a million animals."

MIDWESTERN TUBERCULOSIS CONFERENCE

The first tuberculosis conference in the Middle West was held at the Livestock Exchange Hall in Kansas City, Mo., on Friday, May 15th. The attendance was large and the interest unusual. All classes, breeders, feeders, dairymen, traders, commission men and veterinarians were in attendance, and discussed the various problems incident to tuberculosis control and eradication. The meeting convened at 10:00 in the morning and excepting for a brief respite during which time practically the entire body attended luncheon together, continued until 5:00 o'clock p. m.

Mr. Fred H. Olander, President of the Kansas City Live Stock Exchange, was presiding officer and from his introductory remarks, it was clearly indicated that he is thoroughly familiar not only with the necessity but the value of the tuberculosis testing campaign.

Mr. J. H. Mercer, Livestock Sanitary Commissioner of Kansas, discussed the Kansas way. In his discussion he gave a history of the development of tuberculosis control and eradication, and stated he anticipated that by the end of 1926, Kansas would have 20 or 25 accredited counties. He urged practical application of sanitary rules and regulations, and that the local practitioners be given an opportunity for assisting in the testing.

Mr. W. J. Peck, Livestock Commissioner, St. Paul, Minn., briefly outlined the tuberculosis campaign in Minnesota. He stated that five counties in that state had been tested and 19 counties were now signed up for co-operative tests.

Dr. M. P. Ravenel, Professor of Hygiene and Sanitary Medicine, Medical Department, of the University of Missouri, gave an interesting discussion on "Some Reasons for the Control of Bovine Tuberculosis." Dr. Ravenel pointed out the necessity for careful research work by trained laboratory men, and the value of education of the public on sanitary problems.

Dr. Homer A. Wilson, State Veterinarian of Missouri, in his usual manner, described Missouri's past activities and future practice in the control of tuberculosis. From the doctor's remarks, it is evident that Missouri is going to do the best possible during his tenure of office.

Dr. J. A. Kiernan, Chief of Tuberculosis Eradication, U. S. B. A. I., Washington, D. C., deserves credit for his able presentation of making and maintaining modified accredited areas. If any one in the audience had any doubt concerning the value of tuberculosis eradication, such doubts were eliminated by Dr. Kiernan's discussion.

Dr. J. I. Gibson, Livestock Commissioner, St. Joseph, Mo., opened a discussion of Dr. Kiernan's address, and pleaded with the audience to eliminate the tuberculous cow as being of greater danger and causing more fatalities directly or indirectly in the human than the loss of human life incident to war.

Dr. W. T. Spencer, Livestock Commissioner of Omaha, clearly and concisely presented the different methods of tuberculin tests and what constituted a reactor.

Prof. H. R. Smith, of the National Livestock Exchange of Chicago, gave an interesting discussion relative to "Swine Retentions Caused by Tuberculous Poultry."

Dean R. R. Dykstra, of the Veterinary Division, Kansas State Agricultural College, Manhattan, Kansas, discussed "K. S. A. C. View on Area Testing."

Mr. R. E. Whitlock, Livestock Commissioner, of Sioux City, Ia., made some timely remarks regarding "Educational Methods" in interesting breeders and feeders in tuberculosis eradication.

Dr. D. F. Luckey, former State Veterinarian of Missouri, and now associated with the Missouri Farmer, Columbia, Mo., by example, illustrated the value of tuberculosis eradication to the livestock industry.

Dr. A. T. Kinsley of Kansas City, Mo., was the last speaker on the program and briefly mentioned the attitude of local veterinarians to area testing.

At the close of the discussions, a request was made that because of the widespread interest and large attendance another conference should be held some time within the next year. Some two hundred and fifty were in attendance, Missouri, Kansas, Nebraska, Iowa, Oklahoma and Arkansas being represented in goodly numbers. In addition Dr. Julien, State Veterinarian of Indiana and some representatives from Illinois were present at the meeting.

It has been demonstrated that raw potato consumes oxygen and eliminates carbon dioxid. In other words, raw potato respires. Plugs of raw potato placed in closed dishes have been used to create an anaerobic atmosphere in which anaerobic bacteria can be successfully cultivated.

Recent Developments in Rejuvenation by Transplantation of Internal Secretory Sexual Tissues

(From Abstracts by T. A. Kitt)

By A. Eichhorn

The study of the nature and action of the internal secretory organs which has recently been termed "Endocrinology" directed the attention towards the sexual organs, especially the interstitial cells of the testicles and ovaries. Many attempts have been made to transplant such tissues through operations and to establish their significance. Glands, that is, those known as internal secretory glands (thyroid, suprarenal capsule, pituitary and thymus) transplanted through operations usually last only for two to three months at the point of insertion. After this time they atrophy and are absorbed. A transplantation even of such short duration may possess great therapeutic value as proved by the autoplastic transplantation of the thyroid gland following operation for goiter. Lichtenstern reported very interesting results on the transplantation of sexual organs. In a soldier who through a wound in the war lost his testicles and therefore, exhibited total physical and psychic defects of a castrated person, was completely restored in his bodily and psychic vigor through an operation of the transplantation of a piece of a testicle obtained from another man.

In recent years several investigators have conducted a great number of experiments on man and animals, especially by Professor Sergius Voronoff. The highly interesting results of these, this author presented in the form of fascinating lectures before physicians and veterinarians, as well as representatives of other academic circles and officials. The Clinica Veterinaria reported in detail these lectures from which the following abstracts are taken.

Professor Voronoff who is now actively engaged at the Institute of France has for many years served as a body physician of the Khedive of Egypt where an opportunity was given him in the palace to carefully observe and study the eunuchs. The physical and psychic conformation of these castrates is changed through the absence of the internal secretions of the testicles to such an extent that they lose all characteristics of the man. They no longer possess the growth of beards, they have a small pelvis, a smaller head when compared to other men, longer legs inasmuch as the epiphyses calcify much later, their muscles are flabby with a tendency toward getting fat. Their brain functions slowly, inasmuch as they show poor memory and find with difficulty words for their expressions. Signs of age appear early, they turn gray at the age of 40; at 35 their eyes manifest changes which commence in men only at the age of 60. Likewise they are subject at an early age to arteriosclerosis. All of this is directly connected with the loss of the internal secretion of the sexual glands through which the combined accommodating action of the other organs of internal secretion is disturbed. In contrast with this we have the normal man with strongly developed sexual glands.

Professor Marro observed a boy of nine years old who had three testicles and who manifested a very pronounced growth of hair as well as a body and mental development of a man twenty years old.

These striking differences induced Voronoff to attempt transplantation of testicular tissue of animals. He commenced his first experiments in 1913 in which the transplantations were undertaken under the skin into muscles, upon the peritoneum or in different internal organs. They all failed. He found that at times the transplanted tissues remained alive and functioning for four to five months. In other cases the results were negative. Inasmuch as suturing the small arteries of the testicles with other arteries appeared impossible and inasmuch as the nourishment of the transplanted tissues is dependent upon the blood plasma, Voronoff sought for suitable media and decided on the tunica vaginalis communis, as this responds to all irritations with a profuse infiltration of blood plasma. He had hoped that the dissected long and thin segments of testicular tissue which contain the interstitial cells when placed upon the surface of the tunica vaginalis would be immediate; that is, from the first day on flooded with blood plasma so that its nourishment and adhesion could be expected. Later with the development of a capillary circulation continuation of the life of the transplanted tissue is then assured. As a matter of fact, this expectation was realized so that the transplantations were not only successful in isolated instances but in every case. Further-

more, the inserted piece of testicular tissue was active not only for several months but remained so for seven years. Many histological examinations of transplanted tissues undertaken by Professor Retteren which remained in the tunica vaginalis of rams from two months up to two years proved that the transplantats were actively functioning. The experiments were successful in all species of animals and in the varying ages of these animals. A kid goat six weeks old into which a testicle was transplanted showed in four months an unusual growth of the body and especially of the wool. Most striking were the changes which were observed in old rams. The animals which were very droopy and from the conformation of their body indicated their age, with weak legs, partial defects in the wool covering, inability to retain the urine, showed a remarkable improvement following the transplantation of testicular tissue from a young ram. One of these rams is now 21 years old, has developed a complete coat of wool and proved to have regained his successful breeding qualities retaining them for three consecutive years. After removing the transplanted tissues for histological examination, the ram again became the victim of the weakness of age but again recovered completely including his breeding vigor after repeated transplantation.

The photographs of the two distinct conditions in this animal are reproduced in the Clinica Veterinaria for verification of these results. Voronoff has since 1917 carried out more than 200 such operations on animals with positive results.

The most interesting, however, are the results on man. The difficulty of obtaining such material for transplantation from young men for the purpose of rejuvenating older persons did not appear unsurmountable as Voronoff narrates that he obtained letters from dozens of such volunteers. Furthermore, one quarter to one-third of a testicle is sufficient for a transplantation. There is, however, a law in France whereby no one could dispose voluntarily of his own body. This prohibition extends also to the removal of an organ from a person who was killed through an accident.

Accordingly Voronoff conceived the idea of utilizing the testicles of anthropoid apes, especially of chimpanzees inasmuch as the blood relationship which exists in a chemical-biological sense is proved by the serological facts between the ape and man; likewise, the similarity of the red and white corpuscles promised the possibility of success.

Since 1920 Voronoff has the results of more than 60 such transplantations. The operation was not only performed by himself but also by other surgeons (Professor Tuffier and Bother) in Italy by Professor Marro; besides also in Spain and in England. In England the transplantations were undertaken for practical, that is, economical reasons inasmuch as 27 men kept at the asylum for old men were operated upon which resulted in such recovery of youthfulness that it was possible to discharge them from the asylum. After the publication of the rejuvenating and longevity process, the author was besieged with hundreds of letters.

One cannot fail to smile when one reads that Voronoff selected for his work especially professors of universities; also a great number of physicians, engineers, lawyers and authors. Voronoff contended that especially men of such vocation who according to experience are most valuable to continue to serve mankind deserve to be kept alive and rejuvenated. A further reason for preferring men of those professions was that a more dependable observation and control of the experiments could be expected from them. The action of the testicular substance of the monkeys appears to have given splendid results. A playwright at the age of 64 became prematurely senile, was subjected to the transplantation and although retaining his white beard became again elastic and energetic similar to a young man; so much so that the opportunities afforded him in his connection with the theater resulted in a practice of excesses which induced him after two years to again visit Professor Voronoff with the request that he repeat the transplantation. Professor Voronoff was gladly willing to again undertake the operation in order to observe whether the repetition would give positive results. As a matter of fact, that theatrical gentleman saw the return of his juvenile strength after four months.

The other literary men who complained of the loss of fantasy praised the transplantation as a means of bringing back to them the faculty of writing fiction and plays. A man at the age of 70 and one at 84 years observed failure in memory. Following the operation they regained a markedly improved memory and renewed ambition for work. As Voronoff states, one cannot, of course, expect that the muscle strength and brain function of the old men should be transformed to the vigor of youth.

Nevertheless, it is certainly striking that aged men who after two or three hours of work usually tire, could again be made to work steadily for 8 to 10 hours daily.

Voronoff furnished scientific proof on the effectiveness through blood pressure tests. On the average, older men possessed a blood pressure of 20 to 28 cm.; about three months following the transplantation in these same men the blood pressure regularly dropped to 16-17 cm. The reduction of the arterial pressure according to Voronoff justifies the hopes that the method might be utilized also therapeutically against arteriosclerosis. Among the persons who showed a reduction of the blood pressure following the transplantation were even such men who previously suffered from hemorrhoids and who to their delight observed the disappearance of the affection.

Voronoff further demonstrated in such persons with the aid of the strength indicator, an increase in the energy from 25-32 to 50 and 54 K. It was further noteworthy that as a result of the renewed internal secretion to normal, in the long sighted persons who were compelled to wear adjusting glasses, the crystalline lenses adapted themselves again to such an extent that eye glasses became unnecessary.

The successes observed in all these men could be criticized by some skeptics in a way that they resulted from suggestions and auto-suggestions. These, however, may be readily contradicted by the fact that the physical and psychic rejuvenation does not last only a short time; that is, one to two months, but was present even after four years. A definite proof of the hormone action could also be established through the histological examination of the transplanted tissue. It was in itself of the greatest interest to follow to what extent a part of an organ of a chimpanzee may be made to become part of an organ of a man. It was not an easy matter to find a man who voluntarily was willing to have the wonderfully acting transplanted tissues removed again. Nevertheless, one volunteer was willing to place himself in the hands of the investigator and permit him to dissect again the tissues which fifteen months previously were transplanted by Voronoff. The volunteer gentleman, however, permitted this only on condition that a new transplantation be inserted immediately following the removal of the old.

The histological examination of the dissected piece disclosed that the seminal canals disappeared from the same; on the other hand, there were numerous interstitial cells of normal structure. Inasmuch as the internal secretion is dependent on the functioning of the interstitial cells, while the seminal canals have only an excretory significance, there could be no doubt about the hormone action of the transplanted tissue.

The experiments of Voronoff have also an economical, zootechnical and industrial importance. They are noteworthy to veterinary science inasmuch as they open to veterinarians a new field of activity. Voronoff observed following the transplantation of testicles into young rams a more rapid and increasing development of the musculature and yield of wool. He narrates that the breeders of sheep were astonished at the length of the wool (30 cm); so much so that their shearing instruments adjusted to the shorter sizes had to be readjusted. Voronoff recommends for such improvements in breeding the transplantation of testicles from full grown animals, for instance, from a ram 9 to 10 months old to one only 6 months old. He carried out experiments on a larger scale in Algiers and believes that through methodical transplantations carried on through several generations (by taking for instance 100 young rams and rendering them into triorchids and again treating their offspring in a similar manner) it would be possible to produce early maturing and improved breeds. Furthermore, it would be possible through transplantation to retain the breeding faculties of Merinos which when imported from Australia to Europe soon become sterile. Besides it would also be possible to rejuvenate aged male breeding animals.

In Italy attempts were already made to undertake such a transplantation on a valuable stallion. The No. 4 and 5 issue of the Clinica Veterinaria contains a photograph which illustrates Professor Voronoff, Marro and Bernardina actively engaged in transplanting a testicle of a stallion into a mule. This work has been carried out at the Serum Institute of Milan and the results of these experiments are awaited with the greatest of interest.

The transplantation of ovaries was undertaken by Knauer, Steinach and other investigators in the most varied manner and the effects of such transplantations have been carefully studied. It is a known fact that after an operative removal of the ovary the uterus becomes atrophied. When the ovaries are removed from their normal place and are again attached onto another place of the body, the uterus retains its normal size. If ovaries are transplanted onto male castrated animals the milk glands of these castrates commence to grow and the physical

behavior of the animal becomes feminine (sexual reversion). The castration of female guinea-pigs which have just given birth to young, results in a cessation of the milk secretion in from 8 to 10 days. Re-implantation of the ovaries into primipara females induces the return of the milk secretion. Steinach has further published the fact that the transplantation of an ovary from an animal to a female of the same species stimulates its own ovaries to the production of follicles and ova and in senile female rats induced the disappearance of all indications of age and the re-establishment of the activity of the sexual apparatus.

The most interesting experiments in this line was published by Professor Frei and Dr. Kolb (Zurich). A fourteen-year-old female goat which manifested the most pronounced indications of senility and which was entirely hairless on one side of the body and on the other side showed partial alopecia, having a completely atrophied, functionless milk gland, having also been sterile for three years and besides disclosing a weakness in the loin to such an extent that in order to make it rise it required the assistance of an attendant, following the transplantation of two ovaries from a twelve-weeks-old kid, this same animal showed marked signs of rejuvenation. The ovaries which were aseptically removed from a freshly slaughtered kid were cut in pieces and transplanted into the musculature of the right croup, and intraperitoneally (May 21, 1921). Approximately after one month the udder of the goat commenced to swell and the goat became so much more active that it could rise without assistance. At the same time the hair commenced to grow which after another month covered the animal with a regular young coat of hair. Five months after the operation (October 21, 1922), the goat showed marked estrum lasting for three days. It was bred and after the regular time (early April, 1922) it gave birth to a well developed living kid. In the first five weeks the animal also gained in body weight before becoming pregnant, the increase in weight amounting to 15 lbs. Unfortunately it became necessary to slaughter the goat soon after on account of a purulent gangrenous mastitis.

Whereas the hormone action resulted in this case in a reactivation of the ovaries and cessation of the sterility, Haberlandt obtained in transplantations of ovaries from pregnant animals onto normal female rabbits and guinea pigs a transient sterility. Frei and Kolb explained this difference in that when the transplanted ovaries contain a fresh yellow body, this corpus luteum corresponding to its hormone action, hinders the development of follicles in the ovaries. If, however, a transplanted tissue does not contain a yellow body, the other hormones come in for their activities which stimulate the development of follicles. The general influence of the metabolism and nervous system by the sexual hormones is a very intricate process in which all endocrine glands and the nervous system participate.

In the issues of the Clinica Veterinaria mentioned there appears a photographic reproduction of a 16-year-old bitch which was in a senile condition prior to the implantation of ovaries from a young bitch. Likewise a reproduction of the same animal showing the striking rejuvenation which followed the implantation. The bitch which was operated upon by Dr. Pettinari was fat and asthmatic prior to the operation and could move about only with difficulty. The laparotomy which was undertaken for the purpose of the intraperitoneal transplantation revealed that the ovaries were in the state of shrinking. The young ovaries (of an eight-months-old bitch) were sewed on with the aid of catgut to the old ovaries. Besides two pieces were introduced subcutaneously into a pocket in the abdominal region. An aseptic healing of the wound followed. The subcutaneously implanted pieces were absorbed. As early as one week the general behavior of the old animal changed. She became lively, the respiration was more normal, she barked readily, the body became more slender, later estrum developed so that after breeding one year and three months following the operation she gave birth to five well developed puppies. The same bitch nursed the puppies as proved by two accompanying illustrations.

In human medicine transplantation of ovaries which were undertaken for the elimination of climacteric disturbances failed to result in permanent recovery, but was followed with the atrophy of the implanted tissue and women were again compelled to go through the crises of the change of life. In some cases, on the other hand, the operation had the effect that the old ladies became affected with pronounced sexual desire. As a result of the condition that women following the cessation of the ovarian endocrines succumb more or less to mental depression and can no longer enjoy life the same as men who even in old age still continue to enjoy the intellectual pleasures, art, science, beauties of nature and even sensualities, there will no doubt be some elderly dames wishing for the ovaries of a chimpanzee.

Although as Voronoff remarks with reservations that from the results thus far obtained no exaggerated hopes should be placed on extending life with rejuvenation, nevertheless the subject offers a very promising experimental field for veterinarians.

Wrinkles, Swirls and Shields in Swine

By A. T. Kinsley

Swine breeders frequently consult their veterinarians relative to the cause, prevention and treatment of wrinkles, swirls and shields in swine. Because of the prevalence of these conditions, a brief discussion will probably be of value at this time.

The skin of swine has the same general structure as the skin of other animals. The dermis is more loosely attached to the underlying structure by areolar tissue than in most other classes of animals permitting of the accumulation of excessive quantities of fat.

Wrinkles are relatively common, particularly in some families of pure-bred hogs. They are usually considered as a defect, particularly when they become large and therefore quite noticeable. Wrinkles consist of corrugations and crevices in the skin and occur primarily in mature hogs and especially in those hogs that have been fat and later become thin. A similar condition occurs in the human, particularly in aged persons who when in middle life are relatively plump and become thin as they age. These wrinkles in aged people are usually spoken of as wrinkles of age. Such wrinkles can readily be removed by so feeding that the animal will accumulate fat. This principle is particularly applicable in swine as swine have a tendency regardless of age to accumulate fat if the proper food is provided. This form of wrinkles causes the breeder little concern.

The condition designated as "wrinkles" by breeders that is difficult to prevent and remove, consists of folds or masses of tissue that accumulate in the skin and subcutaneous tissue. These folds are not true skin wrinkles. Such folds or masses beneath the skin are more prone to occur in the mature or aged swine. These folds or wrinkles so-called are composed of fat intermixed with fibrous tissue. Fibrous tissue forms the framework of the masses and occurs in quantities which prevents the fat from being absorbed or otherwise disposed of by the animal body. As the animal becomes older, the fibrous tissue in these folds apparently increases in quantity and thus the folds become larger, although the animal may be starved and become thin and emaciated. In other words, the folds will not disappear by restricting the diet. The only method of removing these masses or folds in the skin and subcutaneous tissue consists of surgical procedure. The dissection of such masses of fibrous tissue from the subcutum is not advisable because of the large amount of scar tissue that would be formed and would probably be more objectionable than the original folds.

In the beginning of the development of these folds excessive development can be prevented by frequent massage, thus stimulating the circulation and apparently overcoming the formation of fibrous tissue. Such massage should be systematically done and at frequent intervals. In order that the skin tissue does not become irritated the massaging should be carefully done by using a small quantity of olive oil which will make the skin soft and pliable.

Swirls

Swirls commonly known as cowlicks were at one time relatively common in swine, and this condition occasionally occurs in the improved breeds of swine. In reading a recent article, the writer was interested to note that in the early days of the history of one breed of swine a certain breeder in Minnesota priced those swine with swirls $5.00 higher for each swirl. In one instance this breeder sold one pig that had two swirls for $10.00 more than a like pig that had no swirls. Swirls are now considered a defect and the price paid for a breeding hog with a swirl is less than one that has no such disfigurement. Such defects can be removed by surgical means, but whether or not this should be practiced is a question of ethics as a breeding animal that has had a swirl removed may produce progeny with the same defect, and thus there may be a tendency on the part of the breeder to have such an operation performed to deceive in the sale of animals.

We doubt the advisability of such an operation unless the animal is of an exceptional type and the defect prohibits exhibition.

In the removal of swirls care should be exercised that the incisions are made obliquely so

that the scars in the skin will be practically obscured by the bristles.

Shields

Shields in swine are the excessive development of fibrous tissue over the shoulders and represent a vestige of the original hog, the shields serving the purpose of protection. Shields may occur in some families of hogs at the present time. Shields cannot be successfully removed without leaving a more serious defect than the shields themselves. In the early development of a pig in which the occurrence of shields becomes apparent, it may be possible by massaging, to reduce the development of such structures to a minimum.

Veterinary Medicine will be glad to have any of its readers report methods resorted to in the relief of wrinkles, swirls or shields.

Endoscopic Work on Dogs and Cats

By J. G. Horning, D. V. M., and A. J. McKee, D. V. M., Houston, Texas

In the series of articles already published by us in Veterinary Medicine, we have described the technic as well as possible with the necessary instrumentation needed. We were especially honored by Dr. Chevalier Jackson for some very clear pictures that should be invaluable to the beginner in getting him started in this work and hereby offer them through the courtesy of Veterinary Medicine. Dr. Chevalier Jackson has an international reputation for developing this work in humans and we recommend any who start to adopt its use in their practice to purchase his book, "Bronchoscopy and Esophagoscopy," published by Saunders.

Fig. 1. Mouth propped open with gag made of two large corks placed between canine teeth on left side of mouth.

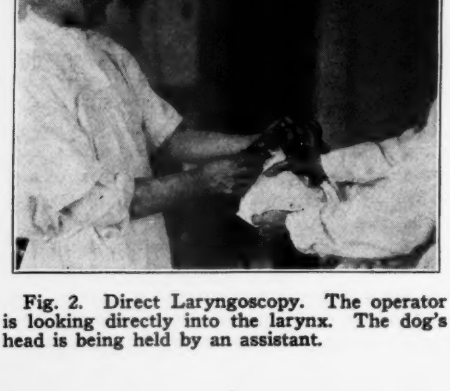


Fig. 2. Direct Laryngoscopy. The operator is looking directly into the larynx. The dog's head is being held by an assistant.

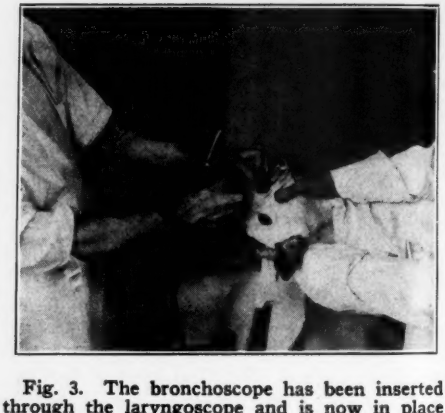


Fig. 3. The bronchoscope has been inserted through the laryngoscope and is now in place in the dog's left bronchus.

In our use of the instruments, we have removed foreign bodies from the trachea, bronchus, esophagus, stomach, larynx, and then have been able to put the instruments to a different use. The bronchoscope has been used to swab infected secretions from the bronchus and spray with a medicated spray. This was used in chronic bronchitis and pneumonia. We have swabbed the trachea and bronchus after mechanical pneumonia was produced by the owner

pouring castor oil in some cases, mineral oil in other cases, and recently lard, down the animal's trachea unintentionally by the animal resisting while the owner was trying to give it medicine. In these cases we have had a mortality of 25 per cent, which is very satisfying inasmuch as the mortality usually runs 100 per cent in cases not treated.

We have used the esophagoscope in rectal examinations as well as vaginal examinations and in bitches that have run out during their heat period with dogs to which their owners did not want them bred. We douche with Abbott's Chlorazene and make an entrance to both tubes of the uterus, painting with tincture of iodin.

Fig. 5. The esophagoscope has passed through the hiatus esophageus into the stomach. For this passage through the lower portion of the thoracic esophagus and the entering of the stomach, it is necessary to have the dog's head low. In doing this, however, the esophagoscope is guided into the lumen as it is seen opening up ahead by the operator.

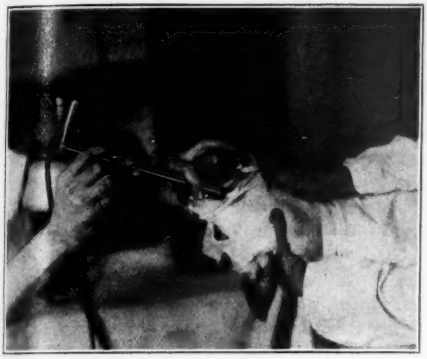


Fig. 4. Introduction of the esophagoscope. This illustration shows the position of the bite-block made of corks and also illustrates the position of the esophagoscope in passing down the upper portion of the esophagus.

In ear work we use the small bronchoscope and thus dispense with an ear speculum and still have an excellent instrument.

For our general work we are able to keep the instruments in daily use and relieve many conditions in our little patients that it would otherwise be impossible to do, at the same time rendering better service to our clients.

There were 250,000 deaths from bubonic plague during 1924 Ten million persons have died from this disease in the last 25 years, and hundreds of millions have succumbed to it since the beginning of recorded history. With the facility with which rats carry this disease from one country to another on board ship, it seems likely that practically all seaports may sooner or later have to be regarded as actually or potentially infected with plague.

Eggs kept in cold storage in a frozen condition for nearly nine years have been found by the Bureau of Chemistry, United States Department of Agriculture, to retain practically their original vitamin-A potency. From the results of this experimental work it seems that freezing eggs and keeping them for long periods in cold storage causes but little, if any, deterioration with respect to this vitamin.

It has been suggested that an immunity of the tissues through which infections gain entrance would probably give the highest degree of protection. Thus it has apparently been demonstrated, at least in one instance, that a fowl may be solidly immunized against the B. gallinarum by feeding dead cultures of that microorganism. Some investigators are suggesting the intradermal injection of anthrax vaccine instead of the usual subcutaneous or intramuscular injections. This method of immunization is worthy of a trial at least in those areas in which extensive losses have occurred after the usual method of vaccinating. If this theory is correct a high degree of resistance to cutaneous infection of anthrax should be established by intradermal vaccination. However, protection from infection through the digestive or respiratory infections would not be obtained if the intradermal vaccination is specific in immunizing the skin only.

CHOKES

By O. V. C., '94

A nine-year-old driving mare choked on oats. No evidence could be obtained by external examination, but the symptoms of choke were present. The treatment given consisted of fluid extract of belladonna three times a day on the tongue. Belladonna was recommended as a remedy for choke those days. Belladonna did mask one of the symptoms of choke. It reduced the amount of saliva that flowed over because it could not be swallowed on account of obstruction to its passage through the esophagus. In the course of three days the mare in some way recovered.

A dairy cow choked on a wedge-shaped piece of rutabaga. The small end of the wedge pointed upward or forward towards the mouth. By keeping the mouth open with a speculum, it was possible for one with a slender arm to reach into the esophagus about a foot past the pharynx and get hold of the small end of the piece of rutabaga with the tips of the fingers and thumb, but it was impossible to pull it out. A broom handle had been used to force it down, and considerable blood appeared upon the arm and hand when withdrawn from the mouth of the cow. It seemed necessary to explain to the owner that the blood was the result of the broom handle operation and not caused by the hand although blood was oozing from the tender skin of the arm where the file-like tongue had come into action while the hand was busy trying to grasp the cause of the trouble. The grip of the esophagus on that piece of rutabaga caused the young veterinarian to do a little thinking. He had run onto something rather difficult and it looked as though he was going to score another failure. Why not try cocain to loosen the grip of those esophageal muscles? A one-ounce solution containing thirty grains of cocain muriate was used on the obstruction by pushing the needle through the skin down onto the forward end of the piece of rutabaga until the needle could be felt to grate upon it. Some of the solution was injected in the mucous membrane, then the needle slowly withdrawn until the point was thought to be in the wall of the esophagus, when more of the solution was injected. The injection into the wall was made at several points and some of the solution was left in the tissues outside the wall. Thinking that he had done all that was possible, and it being 11 p. m., the veterinarian was glad to leave the cow to the care of the owner with instructions to call early next morning if the animal was not better. The cow was reported well next morning.

A cow choked on corn fodder had been standing about twelve hours without showing any desire to eat or drink. The bulging of the sides of the neck about ten inches past the larynx showed plainly that it was a case of choke. The mouth was kept open by a speculum, and two handfuls of corn husks were removed, leaving what felt to be a corn cob cross-wise in the esophagus. The corn cob, six inches long, was removed by grasping it in the middle with the hand, giving the wrist a twist so as to bring one end of the cob upward, and withdrawing the hand with the cob. The cow was offered water which she drank freely. Drugs would not have relieved this case of choke.

A cow in advanced pregnancy choked on a carrot. It was possible to reach into the esophagus and get hold of and even break pieces off the carrot with the fingers, but it was impossible to pull it out. The animal was bloated. The bloat was relieved by trocar and cannula. Arecalin hydrobromid was given hypodermically in repeated doses. The cow went through all the tortures of a death struggle following the second dose of arecalin, but finally quieted down and appeared to have found relief. A week later the veterinarian was called to remove a retained afterbirth. The cow had aborted as a result of bloat, arecalin and violent contortions.

An old mare afflicted with heaves choked on oats. The choke was located about half way down the neck. An attempt was made to relieve this case by the use of cocain. It was a failure. It was possible that this case could have been helped by the use of pilocarpin compound (P. V. S.), or arecalin could have been used with no worse results.

About ten o'clock one Sunday morning a friend called up to inquire as to what could be done for a horse choked on alfalfa. He was advised that a dose of arecalin might help the animal. The horse was in a paddock, had plenty of room and was doing his best trying to swallow the cud, occasionally trying to cough it up but without success by either method.

The alfalfa had been stacked before it was properly cured and was as tough as string leather. Plenty of saliva was coming over as is usual in such cases. A grain of arecalin hydrobromid was given hypodermically, and the owner advised to leave the horse alone for an hour or two. At noon the owner called again and said that he thought the horse was no better. Upon examination on a second call, the horse appeared to be perfectly normal, and water was offered which he drank freely. Arecalin saved this animal.

One April evening a cow was coming up from the lowland pasture where she had spent the afternoon searching for succulent shoots, which the experience of former years had taught her were to be found down there where oozing water made exact patterns of the hoof marks left upon the soft, moist earth, before any herbage worth while appeared upon the higher ground. She saw the opened gate to the orchard and an opportunity to investigate those parts where she had not been allowed since the days when milk sufficiently satisfied all her wants and green grass served only to upholster the bed on which she took her noonday nap. Returning from her search of the orchard past the side door of the kitchen, she spied a nice pile of beets which had been that day removed from the basement of the house to be used as food for the stock as soon as the farmer had the time to properly serve the same.

Now this was her chance to help herself and without saying as much as if you please she took one of the beets and was about to chew it up when John, the hired man, came with a big stick to drive her out. The cow being afraid that John was going to take the beet away from her attempted to swallow it, but whether due to the largeness of the beet or to a guilty conscience or both, the beet did not go down, but lodged in the esophagus a short distance below her pomum adami.

John reported the occurrence to the owner, the neighbors were called in and various attempts were made during the night to relieve the cow of the beet. By morning the cow's abdomen was distended with gas, the membranes of the mouth were anemic and the breathing was short. The cow had spent the night in the empty hay loft, the floor of which was on a level with the ground on one side of the barn. This it seems was the handiest place to care for the animal during her trouble.

After the mouth speculum was placed in position and adjusted to its widest capacity, assistants were asked to stand on each side of the cow's head, to each grasp a horn with one hand, to place the free hand on the cow's nose and push her head towards the floor. The operator standing on the cow's right with one arm over her neck, brought both hands together on the neck above the beet and gave a push downward. The beet shot out against the floor, bounced several times, then rolled about thirty feet and finally came to rest against the inside wall of the barn. This spherically shaped beet, about four inches in diameter, was practically blown out by force of the confined gas that had accumulated during the night.

A farmer's son had been in town with a load of grain one afternoon in the autumn when the days had begun to get cooler, and arrived home a few hours before supper time. It happened there was something that needed his attention as soon as he arrived so that he did not have time to unhitch his team and put the horses out of the wind which was rapidly cooling them as they stood hitched to a post until the call came for supper, when they were put in the barn. After supper the boy went out to do his chores and found one of the horses he had been driving that day standing back from the manger taking no interest in the excitement that occurred when a large barn-full of animals were being served their food.

Seeing that the horse was not right, a veterinarian was called. The veterinarian on arrival did what he thought was right and proper. After the veterinarian had gone, some one suggested that another should be called, as the horse was a valuable one and they felt they could not afford to lose so good an animal if anything could be done that would prevent it.

On the arrival of the second veterinarian near midnight, inquiry was made as to what they thought was the matter with the horse. "Well, we don't know. He will not eat. It seems as though he can't eat. There must be something in his throat."

They were asked to untie the horse and turn it in the stall so that his head would be in position for examination. On being approached the horse backed farther into the stall, and on reaching toward the head, it was jerked away as if in fear. The owner was asked if the horse was always afraid of the bridle? He answered, "No, but he is afraid you are going to do to him what the other fellow did."

"What other fellow and what did he do?"

"We had another man here this evening who was trying to get the thing out of his throat with a long peeled willow limb with cloth wrapped around it."

Seeing that the horse was afraid he was going to be hurt, and desiring to overcome his fear and get on better terms with the animal, we decided to try a little kindness. A bucket of cold water was brought and offered the horse. He drank slowly although he had not had any water since he left town about noon time. The fact that he drank at all was proof that there was nothing in his throat in the shape of a foreign body choking him, at least, nothing that could be removed by probing. That he drank slowly was proof his throat was sore. One-fourth grain of atropin sulphate was given hypodermically and the owner advised to offer the horse cold water every hour, that the animal should be well blanketed (using several heavy blankets), and that he should be taken to another barn where the ventilation was better. Nothing more was learned of this case until some months later when upon meeting the owner he stated that the horse was able to eat next day.

A farmer who had prospered during the high prices for farm produce a few years ago and having more money than he thought necessary to meet running expenses, decided to invest some of it in stock, not in oil stock or in packing plant stock, as so many of them unfortunately did, but in a better breed of dairy stock. He bought several purebred heifers from a friend who lived some six miles distant. Those heifers were placed in comfortable quarters and well cared for by the owner and his sons, of which he had two—one about eighteen and the other possibly thirteen years of age. Something like thirty days after bringing the heifers to their farm and placing them in their barn, from which they were not turned out even for water, it was noticed that one of the animals refused to eat or drink. This heifer appeared all right in every other way. It was agreed among the family that there was something wrong with the animal's mouth. They investigated those parts and thought that the heifer did take some food if it was placed well back in its mouth. After several days of this hand feeding it dawned upon them that there was something seriously wrong with this heifer. A veterinarian was called and when he arrived, it being a cold, windy day, a few minutes were spent in covering the radiator. During those few minutes strict attention was given to a peculiar lowing that was heard in the barn. The veterinarian had heard this peculiar and never-to-be-forgotten lowing before. The lowing was as regular as the beating of the heart of a healthy animal, and its tone was soft and each sound or call was exactly like the one preceding it, as if played upon one key. When the veterinarian entered the barn, the lowing had ceased. Examination showed that the animal's pulse, temperature and circulation were normal. Occasionally a little saliva dribbled from the angles of the mouth. A pint of cold water was given as a drench in an attempt to learn if the animal still possessed the power of deglutition. The water went down. No sign of swallowing was noticed. The water probably found its way to the lungs.

The owner was advised to place the animal in a separate stall and keep it there, and to be careful not to get any saliva from this animal into any open wound or scratch on the skin of people or other animals; that the heifer should not be killed, and in case they later decided to kill it, it should be bled to death so as not to injure the head; that they should get in communication with the party from whom they bought the animal and find out if he had any trouble with his dog or other domestic animals. A few days later the veterinarian was called back. They had learned that the dog, belonging to the man from whom they bought, had left home without any apparent reason, and that the cat, always playful, had suddenly taken a fit and bitten and scratched several of the children.

There was no way of holding this case any longer. They knew what they had to deal with. It was a case of allowing the heifer to live until the disease had become more advanced and take a chance with its development in one of the children in either family. The eighteen-year-old son of the owner was the most interested in hurrying the killing of the heifer. It was winter weather and no need of any one sweating, but little specks of sweat would form on the boy's nose and rapidly enlarge to one-eighth inch in size, sometimes coalescing with another forming little quivering flattened spheres before they broke and disappeared.

There was nothing to do but to kill the heifer, sever the head from the body and place it in an empty egg crate as a handy carrying package. The boys were ready for a trip to the Pasteur institute. Two hours after delivering the head, the boys were notified that Negri bodies had been found in the brain. As a result of such findings seven people were given the Pasteur treatment.

While thinking of the condition that might tempt one to put his hand into an animal's mouth, to investigate the cause of that animal not being able to swallow, I have a picture of a horse standing up at the manger chewing at the

hay he is helping himself to without being able to get any of it down—a very old looking horse, although the owner said the animal was only nine years. The horse's lower lip seemed to be paralyzed and flopped around, allowing the half chewed cuds to fall out of the mouth. It was unlike the action seen when a horse chews on a loose piece of tooth, when it chews all right until it strikes the loose piece, then stops, spits out the cud and finds another one which is masticated and swallowed if it doesn't happen to touch the sore spot. The temperature was below normal, respiration normal and the pulse regular, soft and only slightly accelerated. The owner said he had lost a horse a few days before that acted the same way, but after twenty-four hours it went down, was unable to get up and died in about forty-eight hours after first noticed to be ailing. The diagnosis in this case was cerebro-spinal meningitis due to a micro-organism in the food or drink. This animal died within two days from the time it first showed that it was unable to swallow. A few days later another horse showed symptoms of the same disease. Another veterinarian was called. His diagnosis was ergotism. Later one of the owner's sons was taken sick and the attending physician's diagnosis was that the disease was the same as the one which the horses had, and that he probably had gotten some of the smut from the corn into a wound he had on his hand. The boy died. The term botulism had not been coined then, but this disease was well known under the name of contagious cerebro-spinal meningitis.

The reason for mentioning rabies and botulism under the head of choke is to warn the young and daring to be cautious. It has not been proved that botulism cannot be transmitted by a scratch from a tooth.

In treating choke most spherical bodies may be brought out by pressure from behind if they have not gone past the point where outside pressure can be obtained. If it is something that can be forced down arecalin in my experience has not failed. Pilocarpin compound has been used with success. The first case mentioned in this article is for the purpose of showing how we were at that time without a known medicinal agent that was of the least benefit in the treatment of choke.

Helpful Hints in Equine Practice*

By L. A. Merillat

ABSCESS

From the viewpoint of the therapist, abscess is a combat between the body and invading microbes in which the former is becoming the victor. The fact that the body is winning the battle is the basis upon which to plan the treatment. Meddlesome interference may turn the trend of the battle by extending the inflammatory process over a wider area. Irritating remedies and premature lancing are harmful in almost every instance. It is only when abscess threatens to destroy life before it could possibly ripen that early interference is indicated.

Pyogenesis in confined places (abscess) should be treated by gentle fomentations, warm poultices, antiseptic lotions and absolute rest of the part affected, until it has reached the stage called "pointing," that is, until the abscess is "ripe." This is announced by the disappearance of the surrounding edema and fluctuation of its center. In hairy places, an abscess may be said to be "ripe" when the hairs at a definite place may be pulled out easily, even though fluctuation may not yet be perceptible. Irritating liniments and blisters are harmful because they disguise this physiognomy and thus mask the sole symptom by which the stages of development can be determined.

When ripe, the contents are evacuated by lancing at the point of fluctuation, or at a point below if drainage is thought essential. The interior of the cavity should not be disturbed by harsh instrumentation or digital manipulation, as such measures will serve no useful purpose and might open up avenues for the infection extending beyond the now well walled-off cavity. Often an abscess cavity is traversed by vessels that have resisted the dissolving influence of the process of abscess formation, and which if torn will bleed into the cavity and invite putrefaction or even cause serious bleeding. And always the resulting clot is something that must again be removed either en masse or by the process of decomposition.

* In response to requests from readers, we are reproducing this series of practical articles by Dr. L. A. Merillat, written in 1916-17, and considered by many as representing this author at his best. These discussions are quite as applicable to conditions today as they were when first published in Veterinary Medicine, eight years ago. Moreover, they serve to focus attention on a phase of practice which there appears to be a tendency to neglect in some quarters.

The contents are simply pressed out by manipulating the enlargement. When so located that this is not feasible, gentle irrigations with sterilized water or a weak antiseptic solution are helpful. It is important that solutions thus injected should again flow out so that the cavity is left dry. In the dry, empty state cicatrization of an abscess cavity is exceedingly rapid. Sloughs (the core) of an abscess should be removed by pressure or gentle traction with forceps. If still attached to viable surroundings, it may be left undisturbed for a few days longer until separation is complete. Cutting out a slough in an abscess cavity is not conducive to good results in most cases.

The management during the days of cicatrization is much the same as after lancing. Pressing or wiping out the contents that accumulate and gentle irrigations are the chief measures to depend upon. Gauze wicks placed loosely into the aperture to prevent a too rapid closure, or packing the cavity loosely with sterilized or antiseptic waddings that will absorb the re-accumulations, may be practical. The latter is particularly needed when the aperture is proximally located or where pressure of surrounding structures keeps the aperture closed against free exit of the pus. The best irrigation for an abscess cavity is sterilized water, and the best packing is iodoform gauze.

Peroxid of hydrogen has been used as a means of "boiling out" pus that cannot otherwise be evacuated. This is allowable only where there is a free exit to the frothy issue. When confined, the frothing of peroxid and pus may carry infection into healthy parts to the decided detriment of the healing of the abscess. Hot abscesses, especially subcutaneous abscesses, are dangerous from this standpoint.

Tonsilitis in Dogs and Cats

By J. G. Horning, D. V. M., and A. J. McKee, D. V. M., Houston, Texas

Tonsilitis is an inflammation of the mucous membrane and glandular structure of the tonsil. No age appears to be exempt, the condition being noticed in pups and kittens two months old. The majority of cases occur between six months and two years. Tonsilitis is due to a mixed infection with the streptococcus group predominating but staphylococci and pneumococci are sometimes present. In some cases under our observation, where the owners did not care to have their pets operated on, there was a predisposition to recurrence.

The most common type noted in our practice has been the acute follicular tonsilitis, very few cases of chronic follicular tonsilitis being noted. In this trouble the tonsils undergo considerable enlargement. In some cases the crypts are filled with mucous pus and bacteria. In several cases a pseudomembrane was noticed but this is not common, the enlarged inflamed tonsils with very little if any mucus or pus being the most common.

Symptoms:—Most of the cases are noticed by us at the hospital, the patients being brought in because the owners noticed they were sluggish and refused to eat, although in several cases the tonsils were so large that the animals' difficult swallowing was noticed by the owners. In one case in a kitten the tonsils were so large that the kitten was unable to close her mouth and the owner thought there was a foreign body caught in the throat; this patient was two months old. In our routine examination we always examine the mouth and throat, using a wooden tongue depressor for the throat inspection—these can be bought very cheaply and thrown away after they are once used.

The cardinal symptoms are inflamed and enlarged tonsils, temperature 103°-106°, swollen glands at the angle of the jaw, and a history of lassitude, loss of appetite and muscular soreness, at times a hacking cough is noticed. The duration is usually from three to five days, if the temperature continues high for a longer period there is a possibility of complications.

Prognosis is favorable, unless there are complications. Otitis and quinsy are the most frequent secondary conditions. Infrequent complications are endocarditis, pericarditis and pyemia.

Treatment:—Local treatment is seldom recommended as we have excellent results from complete removal. However, in cases where the owner refuses to have the animal operated on, we swab the tonsils with a solution of tincture of iodin daily, give a dose of castor oil and advise keeping the patient on a diet of ice cold milk, ice cream and ice water as long as the fever lasts.

Surgical technic:—Inasmuch as there is very little in works on veterinary anatomy about the tonsils of the dog and cat, we shall give a short surgical anatomical review of the parts involved. The lymphoid structures in the pharynx termed tonsils, consist of several groups. The faucial and pharyngeal structures are clinically the most important. The faucial tonsils are situated one on each side of the oropharynx, between the anterior and posterior pillar of the fauces. Its shape is roughly ovoid, the longest measurement being the vertical diameter. Many depressions and crypts are found on the inner surface being most numerous in the upper portion. The larger depression above the organ is called the supratonsillar fossa. The outer surface is covered by a fibrous capsule from which the reticulum of the connective tissue supporting the lymphoid structure is derived. In close relation to this surface is the palatine artery (hemorrhage following operation arises from this), the pharyngeal and tonsillar branches of the facial. The pharyngeal tonsil occupies the posterior pharyngeal wall. The tubal and lingual tonsils are developed respectively at the eustachian orifices and over the posterior third of the tongue. Scattered collections of the same tissue unite with large masses described and form an irregular guardian ring encircling the upper part of the pharynx.

In tonsillectomy the patient is placed under general anesthesia and once relaxed a tube is placed in the trachea and the animal allowed to inhale the ether as shown in the accompanying illustration. The bite block devised by Dr. Horning is placed between the teeth as in the illustration, and the tonsils are extirpated. In dogs usually only the faucial tonsils are involved and if they are soft we use a serrated round steel curette. The assistant depresses the tongue and holds the bite block in place, while the operator presses upward from the outside near the angle of the jaw and the curette is placed back of the enlarged tissue, which is carefully cleaned, this being repeated on the other side. Where the tonsils are of a harder consistency, blunt dissection with a curved serrated scissors is resorted to. In cats and kittens the faucial and lingual tonsil tissues are usually involved, and in this blunt dissection the same as used for dogs is carried out. The parts are then mopped with sterile gauze and swabbed with tincture of iodin. After recovery from the anesthesia the patient is placed on the same liquid diet as prescribed before.

In some cases we removed the tonsil tissue by using the finger nail of the index finger of our right hand. This can be used in puppies, but we would hardly recommend it, since it does not look professional and should there be any accidents following, the operator would be justly censured for his crude surgery.

We have had no bad results except in two cases that had complications. The operation can be performed under ether anesthesia by removing the cone as soon as the patient is relaxed—removing one tonsil—replacing the cone and repeating the same procedure, although the technic described by us is easier for the operator as well as the patient and allows the entire operation to be performed quickly and cleanly. Our usual time for the operation is three to five minutes.

We have treated several cases of quinsy or

peritonsillar abscess. All cases seen were in dogs from three to four years old. They give the same clinical history. Although the head is carried very rigid, the glands at the angle of the jaw are more swollen and there is greater difficulty in swallowing. This trouble is in most cases preceded by tonsilitis and is an abscess either above, before or behind the tonsil. The same procedure is carried out in the treatment of this trouble as is used in tonsilitis.

The tracheal tube described is a modification of the tracheal tube used by the Mayo Foundation in their dog work. This was noticed by Dr. Horning while visiting there. We do not know who originated the technic of tracheal inhalation but believe credit is due Dr. J. G. Hardenbergh of the Mayo Foundation.

The death rate per 100,000 population from malignant tumors increased from 76 2 in 1910 to 85.4 in 1920. Some interesting data relative to the age incidence of malignant tumors in tropical climates was published in the A. M. A. Journal, Vol. 84, No. 19.

*Tuberculosis And Its Transmission

By Dr. Charles H. Mayo, Rochester, Minn.

There are in the United States 5,500 accredited veterinary surgeons, and 2,000 who are not accredited. The number of students now attending veterinary medical schools is growing less each year. The wonderful opportunities afforded by the few schools of sanitation and general public health training are going begging. It would be well to combine these schools with schools of veterinary sanitation and public health in order to enlarge the opportunity for service.

Domestic animals are carriers of disease, and as such are a menace not only to each other, but to human beings as well. Caring for the diseases of our domestic animals and the prevention of disease among them is not only interesting work, but enormously important from an economic standpoint. Many of our best business men whose children are grown up, or who do not have children, only think of sickness as an economic disaster, and are wholly forgetful that health is relative, and that death eventually comes to all, and sooner to those who neglect themselves or are infected by diseases that could be prevented by better public knowledge, or better control in the department of health.

Children are not responsible for their diseases and too often their parents have little knowledge concerning the transmission of disease, or conditions causing poor health and increasing susceptibility to it. Caring for dumb animals is like caring for young children; they cannot answer questions or describe their symptoms, so the most successful physician of all is the one who has developed his powers of observation to the highest point.

One fact is certain, that you veterinarians are not troubled with the brazen effrontery of ignorant practitioners of some special method of treatment; they only exist in cities. The veterinarian today, with the great advent of motor power traveling, has almost been forced out of the city to the farm, where there are still domestic animals. Their care, when sick, is an economic problem. Whether they had best be killed or be saved, and whether the type of disease, such as hog cholera, is one that will spread among similar animals, are important questions. I have not noticed that there are any advocates of cults among veterinarians who recommend some type of machine that will force the vertebra in the hog's neck back into place, the displacement of which has caused the disease hog cholera; each day new hogs, becoming sick, slip their vertebra and die. Adherents of these cults do not have the common knowledge that certan diseases of animals are infectious and caused by germs, just as they are among human beings, as they have not had a farm experience. The hard-headed farmer takes no stock in fads, and so similar does he find the diseases of various animals to those of his family that he knows sickness is a result of infection, or a result of microbic or parasitic bacteria living in the body and causing damage to its tissues.

With the appreciation that many of the diseases of animals may become a source of danger to the people about them, or to those who use their products, will come an appreciation of the need for more veterinarians, and for better inspection of the dairy herds of our country. This should call for a veterinarian in every city as general food and dairy inspector, who will test cows for tuberculosis, so that milk will not carry disease to innocent children. City farms should be developed, with a veterinarian at the head, to keep the city clean from garbage, thus reducing the danger of infections carried by flies. Such a model farm would give the veterinarian an opportunity to educate the public with regard to what a healthy animal is, and with regard to the care and the prevention of diseases among them. The income from the farm would not only pay its own expenses, but the expenses of the health office in all but the larger cities.

Of the 8,179,000 head of cattle killed in this country in the year ending June, 1921, 173,328 were condemned as tuberculous; of these 38,328 were condemned in toto and sent to the rendering plant; 18,000,000 pounds of meat. During the same period 10,000,000 pounds of hogs were condemned for tuberculosis.

Ninety-five per cent of the scientific knowledge of the world has been developed within the last hundred years, and the greater part within the last fifty. Knowledge concerning tuberculosis was developed in four stages: (1) in the seventeenth century when little was known con-

*Paper read by title before the U. S. Live Stock Sanitary Association, Chicago, Dec. 4, 1924, and published in the 28th annual report of proceedings.

cerning it and it was called the Frenchman's disease, it was considered a social menace; (2) in 1865, when Villemin, following the work of Pasteur in his study of infectious diseases, demonstrated that tuberculosis was communicable from animal to animal; (3) in 1882, when Koch found the bacillus of tuberculosis, and in 1890, developed his tuberculin from dead bacilli, and (4) when Professor Adolph Calmette of France, who had developed vaccine tests in diagnosis, now with an attenuated but living bacillus of tuberculosis, has developed a living culture, which, if introduced into animals exposed to tuberculosis, will prevent their becoming infected. Revaccination once every year will maintain immunity. The same prophylaxis has been carried out in 247 children with like results; these children had tuberculous mothers and lived in a poor environment, and one in which other children were being constantly infected by tuberculosis.

The slight difference in type or form between the bacillus of tuberculosis of man and that of animals has led to much dispute. By gradually varying culture mediums, much higher or lower degrees of virulence may be produced in most germs. Direct attempts to inoculate different kinds of domestic animals may apparently fail, yet it is known that cattle rapidly infect each other; healthy hogs in the same yard with infected animals become infected, as do the poultry, a sufficient number of bacilli in varying forms existing in the yard manure.

By education, care and the selection of better dairy and beef cattle free from disease throughout Minnesota from 1908 to 1918, tuberculosis among the animals was reduced 75 per cent, and now every endeavor is being made to stamp out tuberculosis from the dairy herds, county by county. Many of the counties have made recent appropriations for this purpose. Five per cent of the hogs in Minnesota are shown to have tuberculosis. Among cattle it has been reduced from 9.4 to 2.4 per cent in ten years. This is a much better record than have the bordering states. Throughout the countries of Europe, the percentage of animals condemned for tuberculosis has ranged from 10 to as high as 50 per cent, the average being between 20 and 30 per cent.

Thirty years ago, 200 of each 100,000 persons in the United States died from tuberculosis; today the proportion is less than 97 of each 100,000. This is the result of the education of the public by free and open discussion of prevention of disease, and of better sanitation. The elimination of public drinking cups and the checking of spitting have aided in preventing tuberculosis. The common knowledge concerning the care of those who have the disease prevents its distribution and tends to a much higher rate of recovery than years ago. It is possible to almost eliminate the disease in human beings, as well as in animals.

Every tissue of the body is susceptible to infection by tuberculosis, either primarily or secondarily. The germs may enter a wound, but in most instances are introduced into the alimentary canal through food or drink. The tonsils, when infected, become a local focus and cause tuberculous glands of the neck, cervical adenitis, the old scrofula of years ago. From 2 to 5 per cent of tonsils removed in various cities show chronic tuberculosis, either of the bovine or human type. From the alimentary tract the bacilli of tuberculosis are absorbed, at the same time as the food, through the intestinal wall into the lymph system, and thus are delivered into the blood. The glands in the abdomen connected with this absorption area are often infected, usually from the bovine type of bacillus. After a period of from one to several years these glandular infections may clear up, although they not infrequently so reduce resistance that death results from tuberculosis or some other disease, or they may cause several years of sickness and stunted growth with mental impairment.

The first regressive change in a diseased gland is fatty degeneration; following this is a deposit of calcium. Tuberculosis of the intestinal mucous membrane and of the genital tract may be either bovine or human in type. Although in domestic animals and fowls the liver is frequently tuberculous, it is but rarely involved in man. Of a large number of cases of abdominal tuberculosis, I have seen but one of the avian type. A large tuberculous spleen had developed, and yellow spots were scattered through the liver, as is noted in tuberculous turkeys and chickens and other farm animals. Cats and dogs are also subject to tuberculosis, and such pets may endanger the health of their child playmates.

Robertson, who for more than twenty years has been in necropsy work, formerly in the University of Minnesota, and during the last few years, in the Clinic, reviewed the findings of a number of years in a very large necropsy service, and found that succeeding generations are developing a gradual immunity to tuberculosis. It has been said that from 70 to 85 per cent of all persons were infected by tuberculosis

at some time in their life, but this percentage is gradually lowering.

The work of the United States Live Stock Sanitary Association in the prevention of tuberculosis in animals and man is being welcomed by the American people who fear the disease and are ready to follow the plans prepared by this society for its abatement.

Items of Interest to the Practitioner

By A. T. Kinsley

Over 15,000 breeders in the United States are using pure-bred sires.

Alaska supplied over two million dollars worth of furs in 1924.

The attitude of a veterinarian to the public makes for his success or failure.

It is not possible to develop a tolerance to cocain, according to Prof. Tatum of the University of Chicago.

Over one million cattle died of disease and approximately one million died of exposure during 1923 in the United States.

An effective treatment for heaves consists of the application by mouth of one ounce of kerosene, three times daily.—Allen.

The estimated annual cost in human lives and property damage due to automobile accidents in the United States is over five hundred million dollars.

The old time molasses, blackstrap, or treacle, possesses quantities of vitamin B and is therefore a valuable supplemental feed.

The five leading farm crops in the United States arranged according to their values are: corn, cotton, hay, wheat and oats.

Lousiness in horses is effectively controlled by dipping or spraying with coal-tar-creosote solutions or arsenical dip providing the stalls and mangers are properly cleaned and disinfected.

The acquired tolerance to drugs is not due to antibodies or immune bodies in the blood serum, according to experiments conducted by DuMez and Kolb, by the use of blood serum obtained from human addicts of morphin and heroin. In other words, acquired tolerance to drugs is different from immunity to an infective disease.

Approximately two-thirds of one billion chickens were produced in the United States in 1924. In other words, the production of chickens last year was sufficient to supply five and a fraction chickens to each man, woman and child in the United States.

Is it professional for a veterinarian to devote spare time calling on his clientele in the capacity of a salesman, selling mineral mixtures, hog powders, or other such products? If it is ethical and professional for a veterinarian to serve in the capacity of a commercial salesman, will his practice be increased or diminished as a result of such activity? Let us have your thoughts in this matter and your experience if you have any.

Effective sanitation and preventive medicine are of relatively recent origin. By a study of records it has been found that in the Mexican war 2,731 men died from wounds, while 15,064 died of disease. In four years of the Civil War, 110,060 Union men died of wounds; whereas deaths by disease numbered 239,874. During the Spanish-American war and the Philippine insurrection, 701 died of wounds while 5,509 died from disease. This shows that disease was far more fatal than fighting. The conditions were exactly reversed in the late world struggle—49,706 Americans died of wounds, but disease killed only 23,451 even though a terrible flu epidemic swept the entire world. Better sanitation caused the reduction of fatalities from disease. No doubt, similar percentage of the losses of army horses due to injuries and disease could be shown if records were available.

A company in California is advertising a paint that is claimed to protect trees against the ravages of rabbits, gophers and goats. If this product is true to the advertised statement, it is a product that will meet with favor because the pasturing of orchards with goats is not only of value in keeping the premises free of weeds but also enriches the soil.

Mineral supplements are of value when there is a deficiency of minerals in the feed. The usual deficient elements are iodin, phosphorus and calcium. These may not all be deficient in the same food and the progressive veterinarian is one that will determine the specific deficiency and supply it in proper form rather than prescribing some prepared mineral compound that contains a variety of unnecessary and in some instances expensive ingredients.

Some cases of periodic ophthalmia have been relieved according to reports by the intravenous injection of 4½ grams of salvarsan dissolved in 100 c.c. of distilled water. The injection should be made very slowly, about 15 minutes being required to inject the quantity indicated. This method of treating periodic ophthalmia is still in the experimental stage and further data is necessary before it should be recommended. Dr. J. L. Jones of Blackburn, Mo., reported one case that was apparently relieved for several months and then recurred. In such treatment, case reports are of very great importance. What has been your experience?

It has been suggested by Dr. Riddle that "there is a difference in the degree of sexuality between the two halves of the body, the right side being more strongly male in the male animal and the left side more strongly female in the female animal." This idea involves many questions and may have a direct bearing on sex control.

There is practically no difference in the susceptibility of pure-bred and scrub cattle to tuberculosis. In over 1,400,000 pure-bred cattle tuberculin tested 4.7% reacted and of approximately four and one-half million scrubs tuberculin tested 4.8% were condemned for tuberculosis.

The total wool clip in the United States in 1924 was slightly more than 280 million pounds, a slight increase over 1923 production. This amount is about two-fifths of the quantity used annually in the United States and it is evident that there is an opportunity for increased sheep production.

There were 17,591,981 motor vehicles in the United States at the close of 1924. This was a net gain of over 2½ million in one year. The license fees in 1924 amounted to $225,492,000.00 and this fee was only a small portion of the expense necessary in maintaining motor vehicles.

Some cases of tetanus have occurred in the human as a result of applying bunion pads on smallpox vaccination wounds. It would appear that there would be a possibility of tetanus infection when contaminated pads are used on bunions. It is also evident that there must be very little care exercised in the preparation of bunion pads.

Potato poisoning is a relatively common condition in animals and man. Poisoning is due to solanin, an alkaloid that is apparently confined to the green portion of the tuber or plant. Poisoning is quite prone to occur after consuming tubers that have been exposed to sunlight and are distinctly green in color.

Salmon poisoning in dogs is of common occurrence in the Pacific Northwest. The exact cause of this condition has not been determined, but it has been found that affected dogs harbored a small unidentified trematode in their intestinal tracts and microscopic cysts have been found in so-called "sore back" salmon. It may be that the cyst in the salmon is an intermediate stage in the life cycle of the trematode.

Quarantine, control and eradication of animal diseases are dependent upon the enforcement of efficient federal and state regulations by qualified sanitarians that obtain their compensation from public funds. The extent of enforcement of such measures is in a direct ratio to taxation. The American taxpayer has reached the limit of easy going endurance, and the future success of control of animal plagues is dependent upon the judicious use of public funds.

The efficiency of a dairy cow depends upon a normal properly developed udder. The most serious and common condition that occurs to the dairy cow is infection of the udder. Various types of bacteria are capable of infecting the udder but streptococci are the most frequent offenders. Streptococcic infection can be readily transmitted from cow to cow by hand or machine milking and in this way an entire herd may become infected. Some dairy herds have been disposed of because of the ravages of this infection. The disease is difficult to control because of the fact that an occasional cow is a carrier. The most successful treatment consists in increasing the resistance by the use of bacterins. In badly infected herds a bacterin prepared from cultures isolated from diseased cows is usually effective.

The butterfat content of cow's milk is influenced by the season of freshening and the period of lactation.

Representatives of the Division of Medical Products of the American Chemical Society are devoting time and energy endeavoring to develop and perfect a method or methods of combating infections by means of chemic substances that will have a selective destructive action upon microbian life. The successful solution of this problem will revolutionize medicine.

Some interesting cases of probable necrobacillosis in chickens was recently reported by Dr. Roseboom of Hiawatha, Kan. Several cases occurred on one farm and affected both cockerels and hens. The lesion consisted of an accumulation of amorphous caseous or mealy substance at the margin of the vent. The superficial underlying tissue was necrotic. An offensive odor emanates from the lesion. The lesion was very similar to the lesion of anovulvitis. It seems probable that the condition may be transmitted by copulation.

Vesicular stomatitis has been quite prevalent in the central states and has caused considerable alarm to the livestock men and some concern to veterinarians because of the similarity of this disease and foot-and-mouth disease. It has been found necessary, or at least judicious, in some instances to verify field diagnosis by inoculating horses or mules, both of which are quite susceptible to vesicular stomatitis but not to foot-and-mouth disease.

Swamp fever or equine pernicious anemia, is relatively widespread and although considerable research work has been done and some valuable information has been obtained as to the artificial transmission of the disease, general symptoms and lesions, no definite effective method of control has been forthcoming. Carriers are apparently of common occurrence and can not be detected excepting by inoculation experiments, and this method does not always give positive results.

Carbon tetrachlorid in doses of 0.2 c.c. or more per kilo weight has been found to be very effective in the removal of hookworms and ascarids from foxes. This drug can be given in capsules, either soft elastic or hard gelatine, provided that food and water are withheld for at least three hours after treatment.

A dog without hemispheres and striatum was kept alive three months by Dresel. This dog was apparently able to learn things and look for food, however, food had to be placed into the pharynx. This experiment indicates the function of the hemispheres and is somewhat at variance with the usual teachings of physiologists. More experimental evidence should be forthcoming on this interesting topic.

Multiple necrosis of the liver occurs in cattle and sheep. Several cases of this condition have been observed in sheep from flocks in which there was foot rot and lip and leg ulceration. Recently several cases of multiple necrosis have been reported in three- and four-year-old steers that are being full fed for export trade. The B. necrophus is usually considered the cause of multiple necrosis of the liver. It is presumed that the microorganism passes through the digestive tube and gains entrance to the liver by way of the portal circulation. The microorganisms probably become lodged in the portal capillaries where they find conditions favorable for multiplication and the sequential necrosis of the adjacent tissue. This condition is not transmissible from animal to animal but is probably an ingestion disease.

Problems in breeding have been given considerable publicity and much experimental work has been done to ascertain the relative value of certain factors. It has generally been conceded that females will not develop, that is, they will be undersized at the age of maturity, if bred too early in life. Recently Mumford and Bernard of Missouri, have published a bulletin in which gilts were bred at the earliest possible date since 1909 with no apparent evidence of injury to the race or breed. Final conclusions should be withheld in such important problems until the influence of all factors is determined.

Dr. Cleveland, National Research Council, following work at Johns Hopkins, has succeeded in devising three methods of destroying protozoa in white ants. The doctor found that protozoa were essential to the white ant and that by destroying the protozoa the ants soon died of starvation. The methods of destruction of the protozoa were, first, heat the building in which the ants occur to a temperature of 95° F. for 24 hours or at a higher temperature for a shorter time; second, deprive the ants of food for a time; and third, expose them to an oxygen atmosphere or air under pressure. No practical application of any of these methods has been

devised for the destruction of pathogenic protozoa such as trypanosoma or piroplasma, but the Doctor has suggested the possibility of the use of some chemical that will eliminate oxygen in sufficient quantities to be of value as a curative agent in protozoan diseases.

Poisonous Plants

By L. H. Pammel, Dept. of Botany, Iowa State College

SOME INDIANA POISONOUS PLANTS

Prof. Albert A. Hansen has sent out separates of a paper he delivered at the Indiana Veterinary Medical Association. He calls attention to some cases which will be of interest to readers of Veterinary Medicine. He notes that on one hundred and two farms inspected in Indiana seventy-one had poisonous weeds. "On these 71 farms, a total of 176 sheep, 118 cattle, 28 hogs and 25 horses died during the year, in most cases after exhibiting symptoms of plant poisoning. On a number of farms, animals have been lost annually for many years past."

He states that it is generally thought that "plant poisoning is most apt to occur when animals are either insufficiently fed, or when a ration is used that is poorly balanced. The lack of a sufficient quantity of salt may also be an important factor. Numerous cases of poisoning are due to turning animals into pasture during the early spring, before the grass has had an opportunity to develop. This is particularly true in regions where bulbous poisonous species, such as staggerweed or Dutchman's breeches, (Dicentra cucullaria) and dwarf larkspur, (Delphinium tricorne) occur in abundance. The bulbs enable the plants to start early growth and the animals are thus forced to eat the dangerous herbage."

In regard to symptoms, he states they vary considerably. In a case of cocklebur poisoning, he says: "Even the internal symptoms may vary considerably. For instance, a hog that died from the effects of eating cocklebur sprouts, fed experimentally by the veterinary department, exhibited the typical lesions described by Marsh, Roe and Clawson, while no definite internal symptoms could be found in another hog poisoned in a similar manner a few hours later."

Speaking of cowbane or water hemlock poisoning, he says: "Water hemlock or cowbane, (Cicuta maculata) contains cicutoxin, one of the most powerful plant poisons known. Cicutoxin is a glistening yellow fluid that may be seen when the fleshy tubers are cut and that seems to exist principally in the underground parts. The young shoots are also dangerous. Whether or not the tops are poisonous is a mooted question. A bulletin issued by the New Mexico station states that in a number of outbreaks of water hemlock poisoning investigated, poisoning took place from eating the leaves and stems. Experience in Martin County, Indiana, seems to support this statement, although most of the trouble in Indiana seems to have originated from the bulbs. A well authenticated case of fatal human hemlock poisoning, that of Clyde Shady, of Craigville, occurred in Indiana during 1923. The danger from water hemlock seems to be greatest during the spring and during periods of drought, when hogs root for food. The following symptoms seem to be characteristic: (1) nausea accompanied by muscular twitching; (2) staggering gait (in hogs the animals seem to become blind and run wildly and aimlessly about); (3) violent convulsions or paroxysms, accompanied by attempts to vomit and oftentimes by salivation; (4) death, apparently from asphyxiation and weakness, occurs usually in from one-half to ten hours, according to the amount ingested. All cases noted in Indiana have not proved fatal, although recovery is the exception rather than the rule. No antidote for water hemlock poisoning is known. The toxicity of water hemlock seems to vary considerably."

Prof. Hansen reported cases of poisoning from black locust as follows: "A case of locust poisoning on the farm of Dr. C. M. Mix, Selma, R. 2, Delaware County, may be cited as typical. During the fall of 1922, two cows that were grazing in a certain pasture became exceedingly ill, the most prominent symptom being paralysis of the hind quarters. Neither of the animals recovered during the winter. About July 1, 1923, a valuable heifer became ill and paralysis of the hind quarters was again the outstanding symptom. This animal died ten days later. The suspected pasture was inspected during mid-July and in one corner a heavy growth of black locust sprouts was discovered that plainly showed evidence of having been grazed. Paralysis of the hind quarters is a symptom that has been noted a number of times in connection with locust poisoning."

CASE REPORTS

TUBERCULOUS COW FAILS TO REACT ON TWO TESTS

On May 4th I completed a tuberculin test on eighteen head of cows belonging to J. M. Rupe of Willits, California. The intradermal test was applied and a ninety-six-hour reading made. At the time of the reading, one cow showed a rather well marked reaction, and I so advised the owner, but he said that he thought the swelling was so small that I should mark the animal suspicious only since he had had two clean tests on the herd, and he was anxious to have no reactors on my present test. I explained to him that in my mind this animal was a positive reactor and must be tattooed according to the state law. He thereupon insisted that the animal be killed and that I arrange to conduct a postmortem examination. I told him I was also anxious to see this animal autopsied, and arrangements were made to kill her the following morning at 9 o'clock.

The next morning to my surprise, the owner had telephoned to the professors at the high school and told them to bring their classes to his ranch to see a tuberculous cow killed and to show the students the lesions of tuberculosis. You may imagine that I did not enjoy autopsying this animal before so many people in view of the fact that she had passed two clean tests and no reactors had been in this man's herd for three years.

I began by going through the abdominal cavity, and I was easier when I found what I thought to be small lesions in the liver, although no further lesions were found in any of the glands or organs of the abdominal cavity. No lesions were found in any of the organs or glands in the thoracic cavity. However, when I examined the post-pharyngeal lymph glands and the submaxillary lymph glands, I was surprised to find lesions in both, the size of large walnuts, of a caseo-calcareous nature. The professors asked for the tuberculous glands to take to the laboratory for further demonstration before the students.

The history of this herd is of particular interest. This reactor, which was fat and four years old, had been raised on a foster mother, and this foster mother proved to be a reactor a year later. The supposition is that this animal had contracted the disease by taking the milk from a cow which was at that time tuberculous. Just why the present reactor should not have reacted on the two previous tests is not certain, but in holding autopsy on the animal, I noticed that the walls surrounding the lesions in the glands were very thick and of the non-inflammatory type, and I am quite convinced that the lesions were there during the previous tests but were walled off in such a manner that a reaction was not produced.

This case clearly demonstrates the necessity for not allowing a calf to suckle a cow which has proved to be a reactor. It also shows the necessity for more than two tests before one can clearly say that no tuberculosis exists in the herd.

F. G. Whitehead

Santa Rosa, Cal.

MAD ITCH NOT CAUSED BY BOVISEPTICUS

On December 1, 1922, a client bought four cows at Elizabethtown, Ky., and hauled them to his dairy at Belmont in a truck which had just unloaded a bunch of stockyards steers, placing the cows with ten others. They were fed pea hay, sheaf oats, alfalfa and corn nubbins, all of poor quality and grown on the owner's farm. The condition of the cows and sanitation were also poor.

On December 12th, I was called to see one of the new cows which exhibited the following syndrome. Temperature normal. Pulse and respiration rapid. Trembling, dancing with hind feet and continual licking and biting at the udder, stifle and root of tail. The patient would lie down and rise, growing more and more groggy until completely paralyzed behind. This cow died in convulsions within twenty-four hours after the first restless symptoms were noticed.

A second new cow was noticed to be clamping and twitching her tail. Examination showed slight hemorrhage and blotches in the vulva. My diagnosis was the mad itch form of hemorrhagic septicemia, and vaccination was recommended.

On December 13th, the first cow was dead and the second much worse. Necropsy of the first showed pronounced lesions resembling those of hemorrhagic septicemia. Heart blood from No. 1 and jugular blood from No. 2 was mailed to the Kentucky experiment station. Each of the remaining twelve cows were given 4 c.c. of hemorrhagic septicemia bacterins. which were repeated on the 15th.

On December 18th I received a negative report from the experiment station and request for further information should the trouble continue. On this day the third animal, a home cow, was taken sick, exhibiting the same symptoms, died in the same length of time and showed the same lesions. The bacterins were discontinued and I also ordered that the corn nubbins be eliminated from the feed.

On December 31st I received a telephone message that another new cow had developed the same symptoms with the addition of showing fight. I immediately telephoned the experiment station, and Dr. A. J. Steiner arrived in time to see the cow in dying convulsions. The next day Dr. Steiner held a careful necropsy and besides finding the characteristic lesions shown in the other cows, found the omasum packed and dry. He took more blood and parts of the liver and spleen and after a thorough laboratory examination and test, reported that no hemorrhagic septicemia or botulinus organisms were present. His opinion was that the trouble while showing the symptoms of mad itch and the lesions of hemorrhagic septicemia, was dietetic.

I learned that the owner had discontinued feeding the corn nubbins only for a few days, and I now insisted that both the nubbins and oats be discontinued, substituting mill feed and a yeast-mineral supplement. After this there was no further trouble, the general condition of the herd improved, and the milk flow increased.

Investigation proved that there was no trouble among the stockyards steers, nor in the herd from which the new cows came, nor among the dry cows and stock cattle on the owner's farm where the feed was raised. My final conclusion was that this was a metabolic disturbance caused by a deficiency of minerals and vitamins in the ration, which was sufficient for steers and dry cows but not for cows in full flow of milk.

Only one other time have I observed identical symptoms, and those were in a Jefferson county cow which became sick and died between the time it was given the intradermal tuberculin injection by a bureau veterinarian and the first observation; and I have never been able to convince the owner that the injection did not kill the cow.

David Smith

Shepherdsville, Ky.

INFECTED UDDER

On the morning of April 30th, I received a call to drive out six or seven miles in the country to see a cow that from the housewife's report was on the verge of death. On arrival I found a four-year-old grade cow, with a calf five days old, down, stretched out, and it looked as if the housewife had not exaggerated matters.

The cow was unable to get on her feet, but I succeeded in propping her up so she lay in a more natural position. On examination I found the right hind quarter of the udder immensely swollen and was able to strip out a small amount of bloody fluid. The temperature was 104°.8 F., pulse 80, respiration 25, no appetite, puffy around the eyes and under the jaw.

History revealed that about a year ago this same quarter became "caked," gave lumpy milk and dried up. At the present freshening, the quarter apparently was in very good condition until the calf was three days old, when it commenced to swell and in forty-eight hours was in the condition just described.

Having experienced a large percentage of loss of parts affected in this way and sometimes the life of the cow, I gave a guarded prognosis and the following treatment: A one per cent solution of formalin, 40 c.c., was injected deeply into the substance of the gland in twelve or fifteen different places. About four ounces of a weaker solution was injected in the sinus. The udder was massaged gently for a few minutes and milked out. An ounce of ether in three ounces of sterile water was then injected, with instructions to milk out and repeat the ether injections every four or five hours. A small dose of Epsom salts and 3 c.c. stock mastitis bacterin were given and sulphocarbolate tablets left to be given three times daily.

The next morning I returned to find the cow able to get to her feet with a little assistance. There was some appetite, temperature down to 102° F., pulse and respiration better, not much change in the infected quarter. Mastitis bacterin, 4 c.c., was given with instructions to continue the ether injections.

The next morning the owner reported a decided improvement in the general appearance of the cow, the swelling having receded and there was a good appetite. It is too early at this writing to determine the amount of reduction

that will take place in the affected quarter of the udder.

L. L. Beck

Pattonsburg, Mo.

AUTOINTOXICATION ON GREEN WHEAT PASTURE

I have had many interesting cases of auto-intoxication in high producing milch cows within the last two months. Perhaps some of my fellow practitioners will not agree with my diagnosis, but I am sure my treatment is correct, for it gets results, and that is what counts the most in the end.

I generally receive my calls on these cases early in the morning, which is hard on a fellow's good nature, but still they are always welcome. A worried voice on the other end of the line generally runs along like this: "Say, Doc, I found my best cow down this morning and she is about dead. I don't think you can do much for her, but she is the best one I've got, and I'd like to have you come out right away if you think you can do anything for her."

When I arrive at the farm, the animal certainly looks like she is about ready to forsake all earthly things and start on a trip to cow heaven. The owner is generally bemoaning the fact that the best cow on the place is sure going to check in and his bank account is going to check out. And here is where the beauty part of these cases comes in, for I have been able to save about 85 per cent of them, where the owner called me in time, and those that are not treated nearly always die.

I generally find the cow flat on her side, very still except for an occasional groan. She has the appearance of a parturient paresis case, except that she is always conscious and able to swallow. However, a few animals show evidence of great pain by kicking, groaning, bellowing, grinding their teeth, rolling the eyes and having clonic spasms. The mucous membranes are usually normal, respirations deep and slow, and an increase in heart action. The temperature is always from two to five degrees sub-normal. The body is usually covered with a cold, clammy sweat—especially is this so in the cases that show great pain.

The history is always that the cow is the heaviest milker in the herd and has been running on green winter wheat for pasture with no other feed of any kind.

And right there is the trouble. The wheat in this county is very rank this spring, and it does not take a cow very long to get more than she needs of it. My theory is that a heavy producing cow getting this one-sided ration day after day finally accumulates enough toxins in the body to take her down. So far I have found this condition only in heavy milkers that have freshened within the last two or three months.

The treatment is simple but very effective. It is as follows: Inflation of the udder, eight c.c. of camphorated oil intramuscularly, a heavy purgative and stimulants in a drench. The animal is kept covered up well with blankets and the rest left to nature.

I have jumped the temperature of some of these patients from 96° to 101° F. in an hour. In all of them, the temperature rises to normal in a couple of hours at least if they are going to recover, and in five hours most of them are on their feet, a bit wobbly and stiff, but able to breathe the ozone of Western Kansas breezes.

Take it all in all, it is a happy day for the cow, the owner and myself when the patient is standing on four feet again.

D. A. Yandell

St. Francis, Kan.

DISEASE OF THE SPHINCTER OF THE COW'S TEAT

A cow's teat, because of its position, is very liable to be stepped upon by the cow itself or by the one tied next to her. Every practitioner who has much to do with cattle, frequently comes across these cases, and I am sure wishes he could go prepared for a radical operation. Teats injured in the above manner, prove to be, in some instances, the beginning of very serious trouble, especially when the owner has been passing a milk syphon or has delayed sending for help, until the patient is perhaps suffering from auto-intoxication. These cases used to puzzle the writer, perhaps because they had a way of getting worse. After using bougies, syphons, etc., with anything but satisfactory results in many cases. it suggested itself to me, that, although nothing in the nature of a wound could be found on the outside (including the tip) of the teat, there must be a focus of infection somewhere, because in some cases, after using reliable bougies, at least with regard to their being antiseptic, and syphons above suspicion, they often got worse. Consequently it was a common practice to amputate teats, although one had been in daily attendance, perhaps from the beginning of the trouble, and more frequently in attending cases where assistance had been requested late. On examining these amputated teats it was frequently

found that a portion of the sphincter was necrotic; this fact suggested that, as surgeons, we ought to remove this diseased tissue as would be done if similar disease were present in any other part of the anatomy adapted for surgical intervention.

It was decided to incise crucially the affected teats, through the sphincter into the duct, first to enable the sphincter to be examined and also to allow the contents of the quarter to be got away. Where the sphincter is enlarged to such an extent as to render it difficult or impossible to get rid of the milk with the hand, this is invariably done now, and at least it allows the quarter to be relieved of the milk by ordinary milking. The diseased portion of the sphincter is then removed if present. Afterwards, before each milking, the end of the teat is bathed with a warm antiseptic solution to open the wound, when the contents of the quarter can easily be got away ordinarily. It has also been the practice to instruct the owner to insert a little pulv. iodoform into the incision, getting a little into the duct after each milking. If the milk is good when this treatment is undertaken, the quarter is fairly soon all right. In cases where the temperature is high and the cow seriously ill, unless necrosis or other very serious trouble has reached the substance of the quarter, they do remarkably well. To delay this line of treatment is inviting something serious.

As far as investigation carries one, the reason for the sphincter becoming so frequently involved, without in many cases there being any sign of a wound or even a mark on the teat, is the fact that it is composed of tougher tissue, while the skin stretches.

The operation is simple; the operator can choose his own instruments, but for the incision, a very sharp ordinary castrating knife answers well, this is best done boldly before the cow anticipates anything of the sort, first of all, of course, having the subject properly secured. The results are good and there is the satisfaction that the treatment is being carried out according to one of the important rules of "Surgery." A remarkable percentage of quarters give good milk after the outlined treatment in bad cases. The teat heals up after a time, and, in a great percentage of cases, no one is any the wiser that there has been any teat trouble. If the cow is being "dried" at the time, it is important to continue milking regularly and to give instructions for the milk glands to be stimulated by feeding the cow well, as it is the flow of milk which keeps the sphincter open and allows it to heal so that the remainder of the sphincter retains its function during and after the treatment. Simple incision can be carried out (without dissection of a portion of sphincter) successfully in cases where there is a sore at the end of the teat which makes milking difficult.

For those not inclined to practice dissection of a portion of the sphincter, it is worthy of mention that the same results can be achieved usually by making a bold incision, as above described, and taking special care before milking in addition to bathing with an antiseptic solution to clean out energetically the V-shaped incision at its depth with cotton wool, afterwards using pulverized iodoform as indicated.

The writer invariably adopts the above treatment immediately now, in cases where the teat canal cannot be emptied normally on account of trouble at the teat end.—O. Stinson, M. R. C. V. S., in The Veterinary Record.

TETANUS IN A COW

This is my first attempt to write a case report and my first case of tetanus in the cow in thirteen years of practice.

I was called to see this cow on April 17th, the owner saying over the telephone that the animal was acting peculiarly. History revealed that the cow had given birth to twin calves ten days previous, and the man the cow had been purchased from said the placenta had come away all right, but after the present owner had gotten the animal home he noticed some of the placenta protruding from the vagina. He employed an empiric to remove it, but he did not get it all.

I found the cow standing, with normal temperature, pulse and respiration, discharge from the vagina, membrana nictitans contracting across the eye at short intervals, ears standing upward and backwards, tail elevated, stiffness of gait, eating sparingly.

I proceeded to wash the external genitals and to remove what placental membranes were left. I found the vaginal canal full of pus and shreds of membrane. I flushed it out with warm saline solution and inserted two-ounce capsules composed of chlorazene powder and boracic acid, washed the external genitals again, and gave 10,000 units of tetanus antitoxin, also one-half grain of lobelin sulphate. The patient was put in a darkened stall, and the owner instructed to feed bran mashes and cut grass. The animal being a cheap grade Holstein, the owner did not want to go to much expense in having her

treated. I told him to call me in a couple of days, which he did, saying that the cow was about the same.

I did not hear any more about the case until ten days later when I was called to this same farm to remove the placenta from another cow that had freshened. I found my tetanus patient eating well and ruminating normally, but there could be noticed a contraction of the membrana nictitans when the animal was excited. However, the cow later made a complete recovery.

J. C. Mullineaux, D. V. M.

Hagerstown, Md.

NECROBACILLARY PANARITIUM

An interesting condition was recently observed in some 130 two-year-old steers that were about ready for market. After a careful examination of several affected individuals, it was found that there was an acute inflammation usually associated with suppuration and more or less necrosis, affecting the structures at the junction of the hoof, and extending from that point to distant structures. The condition is ordinarily designated whitlow, panaris or panaritium. From the lesions, there is a very offensive odor caused apparently by the Bacillus necrophorus, hence, the prefix and heading of this article "Necrobacillary Panaritium."

This lot of steers were in splendid condition and fully 90 per cent of them were ready for market when the foot involvement was first observed by the feeder. About ten days prior to the development of the lameness the pens had been rather muddy, although not in extremely bad condition, as they were located on the side of a hill and drained quite well. Hogs were following these steers and there were places in the feed lot where there was considerable accumulation of manure.

It was apparent that some infection was primarily involving the structures in and around the hoof as several steers in the lot were affected, and it was decided that this was a condition resulting from infection rather than Bacillus necrophorus. The involvement was found not only in the region of the heel but also in the interdigital space and consisted of an inflammatory swelling. In most instances there was more or less necrosis and discharge of pus, and from the lesions it was not difficult to detect a very offensive odor. The swelling, redness and pain varied in different animals. Some of the affected individuals were so extensively infected that they would scarcely walk, assuming the decubital position. Some animals were affected in only one foot but most of them showed the infection in all four feet.

This lot of steers would weigh some 1200 pounds. They were grade Herefords, had not been individually handled, and it was not deemed advisable to attempt individual treatment, since because of the dispositions of the animals it was realized that treating would cause shrinkage probably more rapidly than to permit the disease to run its course untreated. The feeder promptly moved the animals into a new lot that had not been previously occupied by any live stock, in order to treat the cattle without individually handling them. A foot bath was constructed around the water tank and thus the animals were required to soak their feet in an antiseptic solution. Ten days after this method of handling had been instituted, no new involvement was noted in the entire herd. A few new cases developed within a day or two after being transferred to the new lot but most of those that were extensively affected when transferred had apparently recovered.

Such conditions are of considerable economic importance, not because of the fatality to the affected animals, but because the animals so affected do not sell readily and are usually depreciated by the buyer, resulting in a severe loss to the seller.

The group of steers in question, we believe, can be marketed in the next week without any evidence of future trouble and thus the owner has been saved, probably, hundreds of dollars.

A. T. Kinsley

MASTITIS IN A COW

I should like some information regarding a cow which has what I call periodic attacks of mastitis and gives lumpy milk. This cow is a Shorthorn, about eight years old, calved in December and since that time has given lumpy milk from the right side of the udder, a part of the time from the front teat, then from the hind teat. The cow has been a heavy milker, is fed on alfalfa hay, ground oats, some molasses dairy feed, some mineral feed and has been on pasture since the snow has gone.—P. F. S.

Reply by J. F. DeVine: I don't think I can add anything to my article on this condition in the March issue except to restate some things. We always keep the cow's bowels in nice condition, not by violent physicking, but just keep them relaxed with our cattle cathartic. We give large doses of our cattle tonic and alterative and increase the doses of our mastitis bacterins, sometimes giving as much as six and

eight mils at a dose every three or four days until the case actually shows improvement. These cases are often best treated while dry; in other words, reinforce the gland while it is not active.

ATYPICAL CASE OF PARTURIENT PARESIS

On a very warm afternoon, the latter part of June, while treating a traumatic wound in a mare, there was a call from the house by the owner's wife that the doctor was wanted at the telephone. On answering, I was informed by a masculine voice at the other end of the wire, in a rather excited manner, that he had a cow that was very badly sick and wanted to know if I could come at once. On questioning him concerning the cow, as to the length of time she had been sick, how she was acting, etc., I was informed that "she was lying out about the middle of a large pasture field in the sun, quite a little ways from any shade, that she had been missed at noon when it was noticed she was not with the other cows (he had three others), that she seemed almost dead, was down and could not move, but was still breathing."

I told him to get the cow on a sled or mud boat and haul her to the barn in the shade and I would be there by the time he had finished moving her. I completed treatment of the case I was on and proceeded at once to the farm, which was about five miles away, it being then about 2 p. m. On arrival I found that the owner had moved the cow, a large grade Jersey, to the shade on the east side of the barn, by means of a low sled, on which she was still lying. The description the owner had given over the telephone seemed to fit the case fairly well—"that she seemed almost dead, could not move, but was still breathing."

Examination revealed a very weak, irregular pulse, shallow, irregular breathing, subnormal temperature, complete coma, eyes staring, mouth open, tongue projecting, the head would remain in any position placed, some tympany but not very pronounced.

Further questioning revealed the following history, using the words of the owner: "The cow did not come up this morning at milking time, and I was about as contrary as she was, so I just let her go and did not milk her. When I came in at noon, I did not see her, so as soon as I finished eating dinner, I went to look for her and found her down out there in the pasture field." This cow had calved eight weeks and three days previously; the calf had been sold for veal fifteen days before. The cow was only a moderately heavy milker. Why did she come down this late after calving? Was it due to failure to milk her on this particular morning and the excessive heat? This I will leave for the reader to decide for himself.

Treatment consisted of 10 c.c. camphorated oil intramuscularly, repeated in two hours, and the udder inflated tightly. On my return trip at 8 p. m., the same evening, the cow was up eating grass. The tapes were removed from the teats, and she was given one and one-half pounds of magnesium sulphate with one-half ounce each of powdered nux vomica and ginger as a drench. Fluid extract of nux vomica was left to be given in two dram doses every four hours until four doses had been given. The cow made a complete recovery and has calved twice since with no subsequent attack.

D. C. Hancock, D. V. M.

Mays, Ind.

TORSION OF THE UTERUS

A cattle buyer, posing in this community for the past twenty years as a veterinarian, came to my office and stated he had a case in a cow that "got his goat." He said he could not find the opening into where the calf was and asked me to go out. I was busy just then waiting on a client and told him it would be an hour before I could see his case.

On arrival at the farm, I found a three-year-old Holstein cow stretched out on her side and straining. Examination revealed a twisted uterus. I placed my hand in the rectum of the cow and by elevating the fore parts higher than the hind parts, I could reach the fetus. By holding firmly to it while the quack and the hired man turned the cow over twice, I could find the opening into the uterus, which was high up, away forward and hard to find.

After another examination, I obtained a block and tackle and ropes with a single tree. These I fastened on the hocks of the animal, and by elevation I pushed the fetus forward and straightened the pelvic limbs into the right position. I placed about two boxes of soda in the uterus and a gallon of tepid water, then told the hired man and the quack to pull the calf, which was easily done.

I learned afterwards that the owner had had another quack, who has been here the past fifteen years, working on this case for four hours and insisted that they get me. I did not know for two weeks that they were working me, but

a client of mine told me that the owner had this quack park his car down the road and wait until I drove in, then to come up and state to him that he had the stock feed that had been ordered. This was made up between them. I was working when he came in. Neither one has said anything to me about this. I collected $10.00 for thirty minutes work and drove back to town, not knowing that the cow had been worked on for four hours before I came. I might add that the cow did fine, but the calf was dead.

H. G. Stephenson, D. V. M.

Independence, Kans.

DELIVERY OF MONSTER CALF

On March 27th a client asked me to go to see a cow which he thought had been in labor since 4 p. m. the day before. This was at 10 a. m. The cow had been due to calve on the Sunday before. On examination I found the two front legs of the calf presented with the head, but behind the head was a protuberance which felt like another head. The legs and head presented were pushed back so that I could ascertain what the other protuberance was. It was found to be another complete head on the right side. The owner was informed that I would have to take away the front legs to get more working space, and he suggested it was probably best to slaughter the cow at once. However, I persuaded him to let me operate as I had no doubt the cow would be all right.

I know I am open to criticism, especially from authorities, on my method of operating, but fools, they say, rush in where angels fear to tread. In an obstetrical work on the amputation of the front legs, it is recommended that the hooked ring embryotomy knife be pressed into the skin up to the top of the scapula, or as near thereto as can be reached, and the skin divided down to the pastern. It goes on to say that until the separation of the skin from the leg and the shoulder has been completed, the skin should be kept intact at the pastern so that when traction is applied, the integument, as well as the leg, is rendered tense, and the operation is greatly favored.

I have a great amount of respect for that author as I have found many useful methods described by him, and it would be presumptuousness on my part, a mere infant in the profession, to offer anything new. I must acknowledge that I have had only three cases in which I had to resort to amputation of the front limbs—this one and two others, one with the head of the fetus deviated to the right, the other to the left. However, whether it was physical inability or incompetence that made me unable to get the skinning done from the scapula down, I cannot say.

When I pulled on the pastern, or rather ordered the pastern to be pulled upon, the scapula became engaged in the vagina and pelvis, and I could not work very well as I had no room, and when I shoved back the legs and had the scapula in the uterus, the integument was flaccid, and it was rather trying for me to incise the skin without the knife slipping off, and I was in deadly fear of wounding the uterus. So I pulled the leg out as far as possible and incised the skin from the elbow joint down. At times someone had to hold apart the lips of the vulva so that I could go as close to the elbow joint as possible. I also found that leaving the skin intact at the pastern made it exceedingly difficult to carry out the skinning process, so I divided the skin at the pastern by girdling it, when the skinning became much easier. When the skinning was done in that manner, I was able to push my hand under the skin into the pectoral muscles to divide them, then up to the scapula, behind the elbow joint to feel the latissimus dorsi, and by exerting traction, I was able to tear the limb away.

I hope I have made it clear that the skin is divided or incised from the elbow down to the pastern, then girdled at the pastern. The skin can then be pulled as far as the elbow. The hand can be quite readily pushed under the skin to the pectoral muscles, under the skin to the scapula behind and in front, and the cellular fascia and subcutaneous connective tissue broken down.

However, to go back to this individual case, I tried my best to break down the pectoral muscles. They seemed very hard, and as I could not do that, the legs were amputated at the elbow joint. After both front legs were removed, the calf was pushed back, a hook inserted into each orbit and traction applied—of course, a rope was attached to each hook. Traction was applied gradually, and after a while the heads came along readily, and the cow was delivered of her calf. With the exception of the two heads, the calf otherwise appeared normal.

I suppose some practitioners may say that it was a rather risky procedure to use traction on a calf like that as the posterior head was alongside the neck, similar to a lateral deviation of the head, but on manipulation I found that the

junction between the posterior head and neck appeared small, and I figured it out that there was sufficient room for the heads to pass, which turned out to be correct. Some may ask, suppose I had made a miscalculation in my figuring and the heads had become wedged in the pelvis, what then? I weighed the case in my mind and said to myself that if that were to happen, I would use the chisel to diminish the size of the heads by comminution, as I considered it impossible to perform decapitation as some might suggest, since there was complete fusion between the heads and inferior maxillae.

It is probably unnecessary to mention that all along the cow was in the recumbent position. When I got through it was 1:00 p. m. At 6 p. m., I visited the patient and she was still lying down but with a little urging she got up. She was constipated, so I gave magnesium sulphate ℥ xvi, pulv. zingiberis ℥i in 4 quart bottles of tepid water. I did not see the patient again but heard she was getting along well.

Ernest F. Jardine, V. S.
Govt. Veterinary Surgeon
Basseterre, St. Kitts, B. W. I.

MAD ITCH (CUTANEOUS HEMORRHAGIC SEPTICEEMIA) IN CATTLE

I am offering this case report because of the fact that it is unusual in so far as textbooks and other available literature are concerned. According to the literature, hemorrhagic septicemia usually follows severe exposure of some sort or is prone to appear in thin cattle and especially young stock; but in this case the subjects were four-year-old steers in the pink of condition, on full feed for ten months without a change of feed or conditions, and at a time of year when weather conditions were ideal. The term "mad itch" applied to the cutaneous form of hemorrhagic septicemia, so far as I could find, was given only in one place (a biological house catalogue), and as the boys say today, "That name ain't missing it any."

On June 10, 1924, I was called to the feed lot of a client of mine who had 175 four-year-old steers on full feed, and they had been there for ten months or more. One of these steers had died suddenly while the men were after a load of hay. They had fed the animals concentrates just a few minutes before and said that all the steers were up and eating when they left. During the few minutes they were gone, a very light thunder shower passed over, and as the foreman has a mind of his own, he blamed the lightning for the death of the steer, and at the time I was unable to convince him differently.

It was just dusk when I was called, and being a little too late for a postmortem examination that evening, I cut off an ear of the dead animal which I took with me from which to prepare a slide for microscopic examination to make sure I was not dealing with a case of anthrax. After a careful microscopic examination of the slides prepared and finding no Bacillus anthracis, I dismissed the subject for the time being, resting quite assured that if lightning were not the cause of death in this case, something more would appear later, and then the foreman and I would settle matters.

On June 16th I was called again by the foreman in charge at the feed lot. He said to hurry out as one of the steers was all swelled up about the head and was pounding its ear on the tank until it was bleeding. I hurried and found the steer with its ear and nearly all the hide rubbed off one side of the head, and the animal was still rubbing. I roped the steer and tied it to a corn-crib in such a manner that it could not rub that side of its head. An antipruritic application was used which seemed to give the desired results. The steer quieted down, and as it was rather warm I had one of the men sprinkle the patient with cool water to make him as comfortable as possible.

As I was ready to leave, the owner and his feeder came in from feeding the herd, and I asked if they had noticed anything wrong with any of the other steers. They informed me that they had not and that every one was up to the bunks eating. I left for my office, a distance of about a mile, and had just changed my shoes when the owner of the steers drove up and said there was another animal rubbing its rump on the fence with all the vigor displayed by the patient I had just treated.

I again hurried to the lot to find a steer putting his 1500 pounds of weight against the fence and causing boards to crack and posts to lean. He had the hair rubbed off a spot on his buttock, about eighteen inches in diameter, and the blood was oozing through freely. I at once began treating the animal as I had the former one, and by the time I had this patient comfortable, the first steer was down and died within a few minutes.

I started postmortem examination on steer No. 1, and before I had finished, steer No. 2 was dead. I made a diagnosis of cutaneous hemorrhagic septicemia and informed the owner

of the fact. When I had explained to him the cause of the disease and all, he was not entirely satisfied, because to him it seemed impossible that such small bacteria could attack and kill two big steers in such a short time.

Incidentally, the owner of these cattle is a Catholic and one of our city aldermen. A few weeks before this, the Klu Klux Klan wanted to hold a meeting in one of our city buildings, and the council refused to permit them. I don't know whether my client suspected the Klux, the devil or whom, but he asked me several times if I was sure it was not foul play on the part of some one. I assured him at all times that it was not and that the condition could readily be controlled by vaccination.

We made arrangements to vaccinate the next morning. I ordered a shute built, and the owner said he would see to it at once if I would give instructions as to how I wanted it done. The next morning, bright and early, I went to the lot, where I found the owner himself (very unusual) and five men awaiting my orders, which I gave promptly, and as I had another call to make, I informed them I would be back by the time they were ready for me. I was gone about two hours, and when I got back, another big steer was dead. The men said the animal came up within about thirty feet of them and seemed to be in the best of health. The owner was looking at him, when all of a sudden the steer shook his head and fell over, dying within a few minutes and almost without a struggle.

I vaccinated the entire herd with mixed bacterin bovine, using a very large dose. On the third day following, one steer showed signs of stiffness, refused feed and had a high temperature. I gave this animal another dose of bacterins daily for three days with saline purgative and stimulants. This steer made a complete recovery, and not another animal in the whole herd missed a feed.

The lightning theory which so firmly stuck in the head of the foreman with regard to the first steer found dead six days before, was exploded forever. The owner was thoroughly convinced that foul play was not the cause of his loss and that the little Bacillus bovisepticus could kill big steers even much quicker than it did the two that died the day before he witnessed the death of the one while he was watching his men build the shute.

G. G. Faber, D. V. M.

Mitchell, S. D.

OPERATION FOR FLEXION OF CALF'S LEG

While at a farm correcting a prolapse of the uterus in a cow, one of the neighboring farmers who was there as a spectator asked me to stop on my way home and look at a valuable calf, one, as he said, out of the best cow in his pure-bred herd of Holsteins. Complying with his wishes, I found a well marked heifer calf, about two or three weeks old, with one of its forelegs so bady flexed at the knee that when the animal tried to walk it would place the knee to the floor and then advance the other leg. It surely was a pitiful sight to see the calf trying to navigate.

On close examination, I found the skin all worn off the knee in a patch as large as a silver dollar and very sensitive. The carpal joint showed no signs of ankylosis. All the muscles of the shoulder were atrophied from disuse, and this made the case look worse to the average layman than it would to a veterinarian.

After the examination, the client said: "Well, Doc, do you think you can do anything for her? She is no good unless she can walk on all fours."

Being late then and on a Sunday night, I told him I thought I could help the calf considerably, but we would postpone the operation until the next day, which was satisfactory to the farmer. I also told him I did not think it advisable to straighten the leg at one operation for reasons I kept to myself and which I will explain later.

Early the next day, we put the calf on her side, clipped and shaved the leg all around from the elbow to the knee, cleansed the area thoroughly with bichlorid solution, 1-1000, painted with iodin, and with a sterile needle and syringe injected 3 c.c. of local anesthetic deeply along the course of the flexor muscles of the carpus. I then bound on a pad of gauze soaked in a 1-1000 solution of bichlorid and proceeded to secure the animal. The hind legs were half-hitched and drawn out straight backward and the rope tied to a convenient post. The foreleg not to be operated on was also secured likewise. One man held the head.

By this time the leg was thoroughly anesthetized, the pack removed, and using a small tenotome, I plunged it deeply in the posteromedian line, a little above the center of the forearm or where the muscles just begin to get quite fleshy, being careful, of course, to avoid the posterior metacarpal artery and ulnar nerve. Now, I told the assistant to pull the leg of the

patient while I held the radius in a flexed position with one hand. This, of course, brought the muscles up taut, and by turning the edge of the knife to the fleshy part of the muscles, I severed the flexor pedis perforans, perforatus, the flexor metacarpus media and the ulnaris accessorius muscles. As each one was cut, the leg could be seen to straighten. I left the flexor metacarpi externus and internus intact, so that the leg would be flexed a little at the knee or so that the animal could just support its weight by resting its toes on the floor, which it did when we let it up.

Now for the reason I told my client we might have to operate twice. Some years ago I witnessed an operation on a friend of mine whose leg was exactly in the same condition as this calf's leg, except there was ankylosis of the knee joint the result of an accident some years before. Hence, it was decided to straighten the leg by sawing out, crossway of the leg, a V-shaped piece of the carpus and break down the rest of the ossification, thereby straightening the leg. It was a beautiful piece of work to see, and all of us thought the operation was going to be a success. But late the next day when they removed the dressings, the limb from the knee down had turned black, was pronounced dead, and the leg was immediately amputated five inches above the knee. It was explained later that by straightening the limb at once as they did, the arteries were subjected to quite a stretch, so much so that it made the lumen so small that it did not permit of enough blood going through to nourish the leg below, and of course gangrene set in. I have never heard or read of any such thing in veterinary literature, so do not know if a similar condition might have happened in a calf, but this case came to my mind, and I thought if that were true in human beings not born that way, probably if I did the same stunt I would get the same results, which, of course, would mean slaughter of the animal. So I did not take any chances. I thought if I did it my way, a little at a time, the arteries in a short time would accommodate themselves to this stretch and I could go ahead with the rest of the operation, or perhaps by bracing the angle of the knee we could gradually stretch the rest of the tendons, which can be done very nicely in young animals by bandaging to a brace until they walk on the foot proper. I have done this many times for colts where they were born with the foot flexed so badly that they walked on the anterior wall of the hoof.

The after treatment amounted to nothing. The wound healed by first intention. Of course, I applied a brace before letting the calf on her feet. This brace was made of sheet iron, well padded and bandaged snugly in place, being removed every second or third day and the angle straightened a little each time. The owner does this now.

I might add that before the operation, the calf assumed the recumbent position most of the time, but after the second day following correction, she was on her feet a great deal and now will run and jump as well as any of the rest of the calves on the farm. The atrophied muscles are rapidly filling in, and the third time I saw the calf, she was walking on the bottom of her foot instead of on the toe as she did immediately after the operation. The knee is still slightly sprung, but this I can straighten by bandaging. However, if nothing more can be accomplished by severing the rest of the muscles or if it cannot be straightened by bandaging, the animal is still in such shape that it can be raised, and when the proper time comes bred and made a serviceable dairy cow.

L. H. Allen, M. D. V.

Albany, Wis.

CESAREAN SECTION IN A COW

I was called to a case last January—a black Angus cow, four years of age, trying to calve. I was informed that a graduate veterinarian had been working with the cow from 10 a. m. to 3 p. m., and had left about 3:30 p. m. I arrived about 6 p. m. It was raining and dark and pretty cold. A fellow wonders on some of these cases why he ever studied veterinary science at all, because he cannot apply the operative technic that he can in small animal practice.

I made an examination and found all four feet of the fetus in the pelvis and hard as rock. I knew that this was a case where an operation was the only way out. I proceeded to clip the hair from the left side of the animal and washed the parts with soap suds and hot water, giving three ounces of chloral hydrate in a quart of water per rectum. The cow was pretty strong but had been worked with too long in trying to deliver the calf through the normal route.

After getting all needles and suturing material ready, I first elevated the hind parts two feet and placed some hay under the animal. I find this pushes the rumen forward and gives more room. The cow had been down so long

that it was necessary to use a small trocar in the rumen to relieve the bloat. The limbs were stretched up and an incision about 26 inches made. The calf was a monstrosity, all four legs appearing grown together, the penis being situated between the testicles and anus, and there was no anal opening.

I find the left side is far better than the right for cesarean section, as when operating on the right side, the intestines come out and it is difficult to keep them back. I ran out of suturing material, but the owner's wife had some spinning material which I used for the outside after sterilizing the best I could. The operation was performed by the light of two old smoky lanterns and with about ten helpers who were mostly in the way all the time. The uterus was sutured with Lembert continuous sutures, the peritoneum and muscles sutured together, and the skin by itself. Before leaving, I poured collodion on top of the stitches, which finished it off fine. I charged $15.00 for the operation.

The cow got up and lived two weeks, then died. I think if she had been operated on sooner before damage was done in the pelvic cavity, which was torn at the time, the result would have been different.

H. G. Stephenson, D. V. M.

Independence, Kans.

DROPSY OF THE AMNION WITH COMPLICATIONS

Early in April, 1922, I received a call one morning to come out in the country about four miles to see a sick cow. The owner kept five cows on the place but was not a very good caretaker. On arrival I found one of the animals, a grade Durham, six years old, standing in the stable and was informed by the owner that the evening before when he drove the cows from the pasture, this one lagged behind the others and would not eat when she was offered corn in the bundle. Further questioning brought forth the information that the cows had been running on lowland pasture for about a week, and at night they were fed corn in the bundle. Also this animal was due to freshen in about a week.

The symptoms observed were that the cow had had no bowel action during the night, there was a peculiar grunt, drooping ears, dull expression of the eyes, a doughy fullness in the left side, temperature 103° F., pulse 60 to the minute, full and strong.

Thinking I was dealing with an overloaded rumen, I gave the patient a drench of Epsom salts, one pound, powdered nux vomica, two drams, powdered ginger, two drams and powdered acetanilid, two drams, and left with the owner to give a solution of fluid extract of nux vomica, gentian and cascara.

The next morning, I found not much change in the symptoms, except the animal appeared weaker. I was informed by the owner that when he attempted to give the first dose of medicine the cow choked and vomited all over him. This he had left in the manger so I could see it. There appeared to be about half a bushel of dried grass and undigested corn. There had been no bowel action. I thought probably the cow had vomited up the drench I gave her before it had time to take effect, so I gave her another drench like the one given the day before. I advised the owner to keep up the treatment given the day before and to let me know if the cow acted any worse.

About 4 o'clock he called, informing me over the telephone that the cow had gone down and could not get up. I immediately drove out to the place, and the first words the owner said were: "Doc, don't you think she has a dead calf in her?" I didn't tell him what I thought but proceeded to make a rectal examination, when I found to my surprise that the uterus seemed to fill the whole abdominal cavity and was soft, feeling like it was filled with fluid. I explored the vagina and found the os uteri dilated so I could get two fingers in. Breaking through the membrane, there at once poured out a stream of limpid straw-colored fluid, estimated at several gallons. After a good portion of the fluid had run out, the cow seemed relieved and stopped grunting.

I then proceeded to dilate the os, which for a wonder was accomplished without much difficulty, and by using plenty of traction with ropes on the legs, we delivered a calf that probably had been dead for a day or two. The uterus did not contract, so I did not attempt to remove the membranes. We propped up the cow, and she drank a pail of water. I gave camphor and oil hypodermically and left nux vomica and aromatic ammonia for the owner to give every two hours. The cow died that night without regaining her feet.

This was the first and only case I have ever seen of this kind. I diagnosed it in my mind as dropsy of the amnion with complications.

F. M. McConnell

Litchfield, Mich.

RABIES IN CATTLE

(Report awarded 1st prize)

In the first outbreak of rabies I saw last winter in January, the history showed a rabid dog having bitten two other dogs and four cows. The two dogs died within four weeks after being bitten with the typical symptoms of rabies. The four cows died within a period of four months from the time they were bitten.

The first cow died in six weeks after exposure, and the other three died in a week to ten days apart after the first cow died. These dates are not accurate but as near as the owner could tell. The owner saw three of these cows in their spasms. One died on open range, and the owner told me he saw her before she had been eaten by wolves or dogs and that the ground around where she lay indicated that the animal had struggled in great pain.

The cow of these four that I saw in the spasms of rabies was a Jersey, four years old. The first indication the owner had that the animal was sick was that she was restless, could not swallow and emitted a great deal of saliva. That was in the morning, and that night the cow was down and could hardly rise. She was bawling continuously and evinced great pain. I was called the next morning and found the cow down, showing straining of the rectum and spasms of the muscles of the abdomen. There was a slight passage of urine every few minutes accompanied by straining of the rectum and anus, but no passage of feces. Temperature 100° F., pulse very weak. Respiration slow and labored. The eyes were drawn back into the sockets. The animal was in great pain and bawling every few minutes. I diagnosed the case as rabies and killed the cow with a shotgun. The brain was examined and my diagnosis confirmed.

On April 20th, a dog showing signs of rabies bit three other dogs, a horse and a cow. The rabid dog was killed on the night of April 20th and a laboratory diagnosis of rabies established April 21st. Two of the dogs bitten by this dog were killed April 21st. The owner of the horse refused to have it vaccinated, claiming that the animal was not worth the price of vaccination. Today the horse is still alive. It is possible that he was never bitten. I vaccinated one dog, giving three doses of 5 c.c. rabies vaccine three days apart. I also vaccinated the cow, giving seven doses of 5 c.c. rabies vaccine (canine) every day for seven days, beginning April 21st.

The man who owned the dog that was vaccinated called me on May 12th and told me that one of his cows was acting queerly. When I arrived I was informed that the cow had been sick the day before, the owner being of the opinion that the animal had been poisoned on some weeds in the pasture. I found a red Durham cow, seven years old, dry, not in calf, and very thin, being on poor pasture. Her sides and head were covered with mud, indicating that she had been down and had had difficulty in getting up. The eyes were normal in expression. Her gait behind was very unsteady, and she could walk only a few feet at a time. There was great straining as of defecation and urination with no passage of feces and but a slight passage of urine at each straining. Temperature 98° F.; pulse so weak and thready that I could not take it. Respiration short and slow. I gave a pound of bovine purgative. Then the owner and I drove the animal to a small pasture near the house. I saw the patient a few minutes that evening before she died. She was down and in great pain, bawling in a very low tone and still straining as if at defecation and urination with no passage either of urine or feces. In her last struggle, she tried to get up, and in falling back, her head got lodged under her body. The brain was not examined, but from the symptoms and history of the case, I diagnosed rabies. The owner of this cow told me that the dog that bit his two dogs and the other animals mentioned came from the pasture in which this red Durham cow was kept.

On May 18th the owner of the Jersey cow that I vaccinated beginning April 21st, called me over the telephone and told me that the cow was acting strangely, would not eat or drink but was still giving milk. He said the animal acted as if her bowels were bound up, and he gave her a pound of salts. The next evening, May 19th, I was called to his place, where I found the cow down and in great pain. Her eyes were drawn back into their sockets. Temperature 100° F.; respiration slow and labored. The pulse was so weak that I was unable to feel it. This cow also was straining as if at defecation and urination with no passages of feces or urine. She attempted to rise and would throw her head under her body at each attempt. We had to pull her head into position at the end of each of her struggles. She was unable to withdraw it. The owner killed her that evening after I had made a diagnosis of rabies. The diagnosis was confirmed by a laboratory the next day as the owner took the head off and had the brain examined.

Of these six cows that evidently died of rabies, five of them were giving milk, and this milk was given to the children of both these families

that owned the cows. No one who drank this milk has as yet contracted rabies. The state board of health here informs me that there is only one chance in 100,000 of rabies infection from drinking the milk of a rabid cow. I had a few small wounds on my hand when I treated the red Durham cow, so I began taking the fourteen-dose rabies treatment for humans.

H. C. Groff

Cushing, Okla.

PRE-PARTURIENT PARESIS

(Report awarded third prize)

Among the case reports in Veterinary Medicine for the past few months, I note a number deal with parturient paresis, also that several practitioners use strychnin with udder inflation. This causes me to submit the following interesting case:

On April 29th, about ten o'clock in the morning, I was called to see a cow that the owner thought was dying. History showed the animal was due to freshen within a few days. She was seven years old, a family cow, registered Jersey, gave between five and six gallons of milk per day, belonged to a minister who gave her the best of care, feeding her a mixture of bran, two parts, chops one part and alfalfa hay.

I found the cow stretched out, lying on her left side, eyeballs turned back, strenuous breathing. While getting her history, I took the animal's temperature, which was 96 degrees. The whole family was excited. I quickly drew the conclusion that I was dealing with a case of pre-parturient paresis.

While the owner stripped out the udder, I gave one-fourth grain atropin sulphate and sent to the house for all the old quilts that could be found. I next inflated the udder, afterwards covering the patient with two large blankets that I carry in my car just for such cases and piled on all the quilts the owner's wife brought out. I next carefully examined the neck of the uterus to find out if we were to expect delivery of the calf soon. I found it still sealed, but there were signs that the cow might possibly freshen in two or three days. The owner was quite alarmed as the animal was still stretched out on her left side. In about thirty minutes she raised up and placed her head in the right flank. This somewhat relieved the anxiety of the owner. Within an hour and a half the temperature was 99 degrees. I then gave another quarter grain of atropin, and within thirty minutes the temperature was 100.6, with the animal showing signs of reviving. We urged her to get up, and with our help she got to her feet—in five minutes and voided her urine. I instructed the owner to offer water every half hour with the chill taken off and to milk out and give bran mash of two quarts in eight hours.

I returned to my office, and before the eight hours were up the owner called, stating that the cow was somewhat dizzy and was not acting right. I immediately returned and found the animal suffering from a relapse as by the time I arrived the patient had gone down again. I repeated my former treatment, this time giving one-half grain atropin. On examination of the vagina, I noted slight dilation of the neck of the uterus. The patient quickly recovered from this relapse, and I gave the owner the same instructions as at first, only advised that at his noting a slight change to call me again. It was just exactly twenty-four hours after my second call that the owner called me the third time.

On arrival I noted signs of labor and a relapse of the parturient paresis. Now, this scene is not so easy to describe as one might think. The amnion was partly exposed. The animal was snoring, regaining consciousness for a few seconds to raise her head, then would go off again into unconsciousness. I gave a half grain of atropin, re-inflated the udder, took the temperature which was 100 degrees, waited thirty minutes, took the temperature and found it 100.9, the animal showing consciousness again. I immediately proceeded to deliver her of a nice male calf, placed four uterine capsules in the uterus, took the temperature again and found it 101.2, assisted the patient up, had the calf taken away and instructed the owner to give it away or raise it by hand as I refused to let him milk the cow for ten hours. I also gave instructions to watch for the discharge of the placenta and to bury it, not to let the cow eat it.

The cow made a nice recovery and is now giving six gallons of milk per day. This minister says he has a better impression than ever of the skill and service performed by the veterinarian.

I should like to ask all veterinarians who still use strychnin to use atropin on their next case and the blankets also with their treatments. Here was a case where the cumulative action of strychnin might have gotten one in bad, and besides the atropin seems to raise the temperature quicker.

Now as to inflation of the udder. Too many use the bicycle pump or are not careful. This makes the operation seem crude, and one takes too big a chance of infecting the udder. The milk tubes used on my parturient paresis cases are never used for other udder conditions such

as septic udders or simple cases of garget, as even if one boils them there is always a chance of causing infection if no more than transmitting the abortion germ. I boil my milk fever tubes, then wrap them in paper, place them in the oven and heat until the paper is brown, then place in a separate box. The pump I use has a sterilizing chamber in which I place cotton that contains a powder composed of menthol, eucalyptol, thymol and boracic acid placed in the center of the cotton, and the air going through this is saturated to a marked extent with this antiseptic, all of which helps to keep down infection in these high priced milk cows. I make these statements knowing that even in the cruder treatments we seldom get infection where care is used, but this method serves as a further precaution, and the owner is less likely to attempt to treat the next case if he notices this odor. Most clients always want to examine the machine, and on smelling the slight odor that comes from the tube, they readily understand that the antiseptic chamber has some action on the air and feel that here is something different from the bicycle pump method.

John W. Brown, D. V. M.

Ft. Scott, Kan.

SUBPERIOSTEAL FRACTURE OF THE HUMERUS IN A MULE

This mule was reported to have received a kick from another mule on the previous day. He progressed on three legs. The shoulder was not much swollen, and manipulation failed to reveal any crepitation.

My diagnosis was subperiosteal fracture of the humerus.

The prognosis was favorable, as the animal in standing placed a little weight on the leg.

The treatment was rest for eight weeks. To humor the owner, I had to order warm fomentations twice daily followed with a stimulating liniment, otherwise he would have thought I was not doing all I could for the animal.

About the ninth week after the accident, I saw the animal again. He walked a little better but was still rather lame. After another two weeks' rest, he was walking all right but was lame in trotting. I advised walking exercise twice daily, gradually increasing the distance. In another week, the mule was trotting soundly and went back to work the following week.

Ernest F. Jardine, V. S.

Government Veterinary Surgeon

Basseterre, St. Kitts, British West Indies

CASTRATION OF COLTS IN THE STANDING POSITION

(Report awarded second prize)

In the years of 1909, 1910 and 1911, I found myself called upon to castrate many colts in the horse and wheat raising section of North Dakota. We were expected by the farmers to drive around the country on castrating tours, and from twenty to thirty colts were an average day's work in the spring of the year.

Many colts were out of broncho mares and sired by Percheron stallions. They inherited the size of the Percheron combined with the wild trickiness of their illustrious(?) dams. Many of these are mean enough, so it is quite some problem to throw them, and for other obvious reasons, it was decided to operate on them in the standing position. It is much easier to castrate such, as well as any normal colt or horse, standing than when thrown, all things taken into consideration. I say this advisedly and in consideration, too, of the fine articles which have appeared in Veterinary Medicine on castration. For several years, I threw them all, but have not thrown any since 1911, except ridglings.

In young colts, yearlings and two-year-olds, it is not always necessary or advisable to wash the sheath itself but always the scrotum, although in anything older, especially aged horses, I always have done so.

It is necessary to have a good strong twitch, usually with a spade handle, as the colt will not yank it out of the hand of the average assistant as easily as one made out of a wagon spoke. I also have used the metal humane twitch, which is better I think if one has a man accustomed to handling it. White emasculator—I have used both kinds. White's will be surer of controlling hemorrhage and do it quicker. I also have a chain ecraseur handy as an emasculator handle broke once close up to the joint and I could not remove it, so slipped the chain of the emasculator on over the ecraseur. It saved me an awkward situation. I use the Zeigler castrating knife—it will not slip and cut the hand. A pail of hot antiseptic wash is also necessary.

After washing the scrotum, the operator goes to the near side or flank of the horse, being careful not to effect any pressure with the arm on the flank, grasps the testicle with the left hand and with a rapid movement away and midway between the thumb and forefinger of the left hand, inserts the knife directly into the gland and with a bold sweeping fast stroke, the gland slips at once into the palm of the

that owned the cows. No one who drank this milk has as yet contracted rabies. The state board of health here informs me that there is only one chance in 100,000 of rabies infection from drinking the milk of a rabid cow. I had a few small wounds on my hand when I treated the red Durham cow, so I began taking the fourteen-dose rabies treatment for humans.

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In the years of 1909, 1910 and 1911, I found myself called upon to castrate many colts in the horse and wheat raising section of North Dakota. We were expected by the farmers to drive around the country on castrating tours, and from twenty to thirty colts were an average day's work in the spring of the year.

Many colts were out of broncho mares and sired by Percheron stallions. They inherited the size of the Percheron combined with the wild trickiness of their illustrious(?) dams. Many of these are mean enough, so it is quite some problem to throw them, and for other obvious reasons, it was decided to operate on them in the standing position. It is much easier to castrate such, as well as any normal colt or horse, standing than when thrown, all things taken into consideration. I say this advisedly and in consideration, too, of the fine articles which have appeared in Veterinary Medicine on castration. For several years, I threw them all, but have not thrown any since 1911, except ridglings.

In young colts, yearlings and two-year-olds, it is not always necessary or advisable to wash the sheath itself but always the scrotum, although in anything older, especially aged horses, I always have done so.

It is necessary to have a good strong twitch, usually with a spade handle, as the colt will not yank it out of the hand of the average assistant as easily as one made out of a wagon spoke. I also have used the metal humane twitch, which is better I think if one has a man accustomed to handling it. White emasculator—I have used both kinds. White's will be surer of controlling hemorrhage and do it quicker. I also have a chain ecraseur handy as an emasculator handle broke once close up to the joint and I could not remove it, so slipped the chain of the emasculator on over the ecraseur. It saved me an awkward situation. I use the Zeigler castrating knife—it will not slip and cut the hand. A pail of hot antiseptic wash is also necessary.

After washing the scrotum, the operator goes to the near side or flank of the horse, being careful not to effect any pressure with the arm on the flank, grasps the testicle with the left hand and with a rapid movement away and midway between the thumb and forefinger of the left hand, inserts the knife directly into the gland and with a bold sweeping fast stroke, the gland slips at once into the palm of the

hand. Tension in a series of rapid twitches of the cremaster muscle is at once noticeable, and it is wise to keep the gland steady in the hand until such spasmodic contractions are over, at which time the gland by gentle traction can be drawn down so it is easy to set the emasculator about four inches above the testicle (important to avoid scirrhous cord). The handles are closed with deliberation, allowed to stay for a couple of minutes, the gland being removed in the meantime, and the emasculator taken off a half minute later. The same thing is repeated on the other gland, and the operation is complete.

In yearlings one testicle is often found very small and undeveloped, usually the right, so that the operator can hardly hold it in the hand at all. Knowing that when the knife strikes it, the cremasteric contractions will be very intense which may twitch it out of the hand, one can set a pair of long compression forceps just above and outside the scrotum and well above the testicle. This will assist very materially. I usually advise the owner to wait another year with such a colt as it is usually an undeveloped colt that shows such an undersized gland.

The following advantages are advanced for this operation: "Safety first." Quite contrary to the general impression, it is safer than any throwing operation. There is no danger of an occasional broken back, and the operator at the flank is safer than he is in attaching any hopples or throwing device I have ever seen or used.

It is quicker. Four or five colts can be thus operated on while one is being secured with the average help found around most places.

It is easier, no sweating either for man or beast. The operation leisurely performed will consume from three to five minutes. It obviates the danger of the animal being chilled when let loose on a cold day, while the subject will nearly always be covered with perspiration when let up from the ground after throwing.

It is a little awkward at first, and there is a little knack in it, which anyone can acquire, but it is not by any means as difficult as generally supposed. I also have heard many veterinarians talk of the danger of inguinal hernia and was always looking for it until I had operated for years without a single development of that kind, and doing from 500 to 600 a year in Cavalier county, N. D.

I have done this operation in box stalls at race tracks, on the open brick floor of large stables, in pastures and on the prairie. I have had three or four colts die, from neglect mostly, no exercise and no after treatment, but never lost one on the prairie.

Try a few, and I think you will like the operation and so will your clients. On old horses it is a wonder. On such I always use a dose of chloral and nearly always on the younger ones as well.

Any inquiries will be cheerfully answered.

Ralph W. Balkam, M. D. V.

Springfield, Mass.

AZOTURIA

On March 13th I was called, about the middle of the forenoon, and on arrival at the farm found a four-year-old mare down and unable to rise. She had been sick since about seven o'clock in the morning. She had been floundering around a great deal and her head was badly bruised. The owner, being somewhat of a quack horse doctor, thought the mare had a bad case of colic and had been doping her with turpentine, "Black Draught," and I guess everything else he could think of.

I administered H. M. C. hypodermically and then drew the urine, which was nearly black and very thick. To make this case more serious, a drenching rain was falling, and the water was nearly shoe-top deep where the mare was lying. She had been out in this rain nearly three hours. The H. M. C. did not have much effect, so I gave an ounce of chloral hydrate per rectum. We made a drag of some heavy boards, and as soon as the patient became quiet, we rolled her onto the boards and dragged her into the barn. I then had the owner spend about an hour rubbing her with gunny sacks. After she had been rubbed quite dry, she was well bedded with straw and made as comfortable as possible, when I left with instructions to the owner to call me if the patient became restless again.

About eight o'clock that evening I was called and informed that the mare was floundering around considerably. I went out again and found her very restless. I gave an ounce of chlorocamph anodyne and used the catheter again. I left some of the anodyne with instructions to give it as often as the patient showed signs of being restless during the night. The next morning I returned and found her trying to rise. We raised her to a sternal position and propped her with baled hay. I catheterized her again and again in the evening.

On the morning of the third day I returned and found the mare very restless. I made a rectal examination and found the bladder well

filled, but after I massaged it a few minutes, she voided the urine, after which she became easier.

On the morning of the fourth day, I found her trying to get to her feet, but when we tried to assist her, she would not try. I told the owner to watch her, that I would be back in the evening, when we would get some help and try to get her up, but about noon he called me and said the mare had gotten up herself.

This mare received no medication aside from what the owner had given her and the anodyne, but had plenty of good water and good nursing. I think too many make the mistake of trying to get these cases up too soon. If animals are kept as comfortable as possible and reasonably quiet, they usually will try to get up on the second or third day. They may need some assistance, but if the muscles of one side only are affected, they will be able to stand. However, if both sides are affected, one may have to resort to slings the first day or two. As soon as they recover sufficiently to walk, they should be given daily exercise, beginning light at first and increasing as they are able to stand it.

J. C. Green, D. V. M.

Bronson, Kan.

UNUSUAL LOCKING OF THE BOWELS

This case being somewhat unusual, I thought it might be of interest and possibly of some value to fellow veterinarians.

On May 7th I was called to treat a mare said to be suffering from colic. I found she had been quite violent and later rested more easy but was never entirely relieved. The owner claimed he had lost every animal he had called a veterinarian to treat, and I told him I couldn't see any change in his luck as I thought we were going to have another dead one.

The symptoms shown would indicate a torsion of the bowel. The only variation was that the mare was not as violent as usually noticed in such cases, although in the beginning of the attack, the pain no doubt was quite severe as the patient had bruised her head, hips and shoulders from thrashing and rolling on the ground. Treatment gave no relief whatever.

The mare lived about thirty-six hours after the attack. On necropsy I found the offending object to be a fibrous tumor, about the size of a turkey egg, suspended from the mesentery by a cord about six inches long. The tumor had encircled two sections of the ileum, causing its cord of attachment to completely shut off a loop of the intestine, thus holding an accumulation of gases and causing fatal enteritis.

O. W. Kerr, D. V. M.

Turlock, Cal.

METRITIS AND PLACENTITIS IN A MARE

The following interesting case was attended by me last year and presents much food for thought. It also emphasizes the value of laxatives in the treatment of febrile conditions and the value of quinin and anti-streptococcus serum in cases which may be due to infection by the streptococcus group.

On the 19th of May a black Clydesdale mare, ten years old, and seven months pregnant, was found dull, listless and with no inclination to feed. I saw her at 10 p. m. She was sweating and alternately resting the hind legs as seen in cases of peritonitis. She was not inclined to walk but would lie stretched out and moan. Slight labor pains were noticed. The temperature was 105° F., and the pulse 120. Rectal examination revealed excessive fetal movements. She gave birth to a dead foal within one hour, and half an hour later the afterbirth was expelled together with some enormous sized blood clots. The afterbirth was very dark red in color, almost black, edematous, and large areas of ecchymosis were seen on the fetal surface. The uterus was painful as evinced on manipulation incidental to the insertion of a pessary containing ten grains of proflavine. The mare strained violently. The following was given in a pint of warm water: tincture of aconite, ten minims, and chloral hydrate, one ounce.

May 20th, not much improvement. Temperature 106° F.; pulse 120. There was a little desire for food and water, which was given cold. The uterus was not examined. The following medicine was left: calomel, one dram to be given twice daily; quinin sulphate, one dram every six hours. Also one 20 c.c. dose of anti-streptococcus serum (P. D. & Co.) was given.

May 21st, great improvement. Temperature 104° F.; pulse 90 and not so irritable to the touch. The appetite was better, and the bowels were acting freely. The uterus was examined and douched, the water being immediately siphoned off. In the returned fluid, large pieces of necrotic mucous membrane were found. The denuded uterine surface could be easily felt. As little fluid as possible was left in the uterus, and a proflavine pessary was again inserted. A short walk was advised to ward off if possible an attack of laminitis.

May 22nd, still more improvement. Temperature 103° F.; pulse 72, movement freer. Appetite good and bowels acting well. Calomel discontinued. The uterus was discharging abundantly.

May 23rd, progress good. Temperature and pulse coming down. The mare walked without difficulty, and the appetite was normal.

May 25th, pulse and temperature normal. The uterine discharge was less and contained few pus cells. A proflavine pessary again inserted. All medicine discontinued.

May 31st, mare again normal. The uterus was in good shape, only a thin, colorless discharge being present.

May 10, 1925. The latest report by the owner is to the effect that the mare accepted service in August, 1924, and is at present in foal.

W. E. Armstrong, B. V. Sc.,
M. R. C. V. S., D. V. H.

Wigton, Cumberland, England

SWAMP FEVER

My answer to Doctor Buckle's question in the April issue of Veterinary Medicine, "Is Swamp Fever Curable?" is decidedly in the negative. Even with regard to the doctor's thirteen cases treated and kept under observation for three or four years, and although the results obtained appeared to be highly gratifying from a practitioner's standpoint, our present state of knowledge as to the nature of swamp fever does not justify the assumption that a cure from a scientific point of view had been established.

As I pointed out in my previous article (January issue), a destruction or probably neutralization of the swamp fever virus can in all probability be expected only from the specific action of one or several enzymes of so far unknown nature, which in all likelihood may be found to exist in yeasts, especially Saccharomyces cerevisiae, and perhaps also elsewhere.

The identity of individual enzymes in different plants and animals can be taken as a certainty. It being a peculiarity of some enzymes to show their greatest efficiency in the presence of certain chemicals, as for instance zymase acts best when combined with phosphates, it may be assumed that the presence of nucleic acid will stimulate the activity of a swamp-fever-virus-destroying enzyme in yeast juice or elsewhere, if not activate this enzyme altogether.

The favorable results of Jarmatz from "rotwein" (claret) in swamp fever treatment (Zeitschrift fur Veterinarkunde, Berlin, 1904) are undoubtedly due to the presence of certain yeast enzymes in that precious beverage.

An empirical and rather amusing illustration is the following: About fifteen years ago, a farmer living in the neighborhood of Fort Saskatchewan, according to his own story, lost all his horses from swamp fever but two. The then attending veterinarian had pronounced the death sentence on these two also. In his desperation, the heart-broken farmer turned to a barrel of highly fermented pig feed, which for one reason or another had not found its way to the intended consumers. He administered large quantities of that "spirited" concoction to the suffering animals, and as the story goes, "they lived happily a long time thereafter." The owner claims that both animals served him faithfully many years afterwards. Although the tale comes from quite an authentic and trustworthy person, I would not suggest attaching too much importance to it.

Dr. Buckle will now undoubtedly reproach me with simply jumping into another "terra incognita" (or call it "terra enzymotica," Doctor), and he is quite right at that. I only trust that this little amateur experimental work of mine may induce someone to tackle the great problem dealing with the relations of enzymes to pathogenic microorganisms and their toxins, and that perhaps another "Spahlinger," preferably not surrounded with secrecy and mystery, may arise from it.

C. H. Grunert, V. S.

Ft. Saskatchewan, Alberta

LYMPHANGITIS OR EMBOLISM

The following case was presented for treatment, July 20, 1924:

A gelding had been worked regularly and was turned out to pasture as usual in the evening. When driven up in the morning, the animal was noticed with its left hind leg very much swollen from just below the stifle to the extremity, which was very painful on palpation and was not used in locomotion. The horse was breathing rapidly and in considerable pain but still had an appetite.

This condition was not much changed for three days, when I first saw the patient. There was no evidence of any wound or injury, but there seemed to be almost complete stasis of the circulation. There was a greasy discharge from the heel and a swelling about four inches above the hock. A point just anterior to the tendo achillis was lanced, evacuating a small amount of pus.

In the course of a few days, sloughing of a considerable amount of skin and subcutaneous tissue took place on the lateral side of the leg, exposing the deep flexor tendon both above and below the hock.

After about ten days, healing began to take place, circulation was re-established in the limb, and some improvement was noted. However, the lameness remained very pronounced for several weeks, when the hoof sloughed off. Soon after this, the lameness began to improve with the hardening of the new hoof tissue, and the horse has made practically a complete recovery. Very little enlargement of the limb persists, and he works every day without lameness.

I gave no definite diagnosis, except that the circulation was impaired for some unknown reason. However, I believe it was a case of embolism so complete as to almost slough the entire limb.

George A. Hawthorne

Clarinda, Ia.

GASTRO-INTESTINAL CATARRH AND HEPATITIS

A few months ago, I was called by a farmer friend to see a fine sorrel gelding showing symptoms of obstructed bowel. I gave the usual purgative and stimulative treatment, and the animal apparently made a complete recovery.

Two weeks to the day, I was again called to see the same horse and found the animal in the same condition as before. Similar treatment was given, and in forty-eight hours the patient seemed well on the road to recovery. However, to my surprise, the horse became worse, showed dull pain, would paw a little and lie down most of the time. Temperature 101° to 101°.3; appetite poor; colicky pains after eating; respiration slightly accelerated; diarrhea with fecal matter colored dark with considerable mucus. At one time during the two weeks illness, the eyes and other visible membranes showed a yellowish cast, which was quickly corrected by a dose of calomel. The case was diagnosed as gastro-intestinal catarrh. The treatment consisted of bitter tonic and stimulants with artificial Carlsbad salts. The animal died on the fifteenth day.

Postmortem examination showed the large intestine contained very little material and seemed normal, while the small intestines were slightly congested and contained quite a bit of mucus. The duodenum was very dark and much thickened, as was the pylorus. The liver was very much darkened in color, easily torn and tremendously enlarged, weighing 54 pounds. This was the largest liver I have ever found, and I consider it a case of gastro-intestinal catarrh caused from hepatitis, but think it strange that the animal did not show more liver symptoms.

Geo. L. Clark

Columbia City, Ind.

RATTLESNAKE BITE IN COLT SUSPECTED

On August 3, 1924, a farmer asked me to drive out to his pasture, ten miles away, and examine a colt which he thought had been bitten by a rattlesnake. I found the colt walking about in the pasture with its head and lips so badly swollen that he could not drink nor graze. The nasal passages were almost entirely closed so that the animal was breathing with difficulty.

I did not have a tracheal tube with me, so I asked the owner to bring the colt in a truck to my hospital in town. On arrival at the hospital, the colt was almost "all in," and I concluded that the tracheal tube was the only means to save his life. The lips were so swollen that I could not apply a twitch, so I backed the colt into a stall and fastened a halter chain to each side of the halter, the chains being tied to a post on each side of the stall. This is the only kind of stocks I have and it comes in very handy for minor operations such as dentistry work or minor surgery of the head.

I clipped the hair from the middle part of the neck over the trachea at the point where the muscles are spare and made an incision through the skin and connective tissue about one and one-half inches long, along the median line, exposing the trachea. I had only a large self-retaining tube, and the colt was only a yearling and small for his age. I feared to incise too many rings of cartilage, but this was absolutely necessary in order to insert the tube, for there was not time to send for a smaller one. I, therefore, incised two cartilages and excised a portion of them and about half of two rings I had some difficulty in introducing the tube, for the incision was really too small. However, as soon as the tube was in place, the dyspnea was relieved.

The next day the colt was able to drink and eat some soft hay, and in a week's time the swelling of the head was entirely gone. I removed the tube on the third day. The incision healed without stenosis of the trachea. I have since learned that Dr. L. A. Merillat recom-

mends transverse incision of the connective bands between two rings in young horses in order to avoid the risk of stenosis. In that case, one would require a tube flattened from above downward.

I do not know to this day whether the swelling of the head was caused by the rattlesnake bite or from strangles. However, there were other young horses and colts running in the pasture with this one, and none of them contracted the disease, so I am apt to believe that the swelling was caused by a rattlesnake bite.

O. W. Johnson, D. V. M

Davenport, Wash.

THE TREATMENT OF COLICS IN LOUISIANA

Much has been written on the subject of colics and their treatment, but still there seems to be a great deal of discussion on the subject, the chief object of attack being the stomach tube. When I first started to practice, I thought as soon as I mastered the art of passing the stomach tube, my greatest obstacle in the treatment of colics would be eliminated. After five years of practice, I am still a user of the tube and think it indispensable in the treatment of colics as we find them in the South.

My experience with colics in the South proves to me that fully 95 per cent of the cases we get are due to gastric engorgement and fermentation, the chief grain diet being corn. Usually the case is of so long standing that the fermentation extends into the intestines, and it is not uncommon to find intestinal flatulence present. I know of no better method of handling these cases than by the use of the stomach tube and plenty of warm water. Most practitioners who condemn the tube do not know how to pass it or have great trouble in passing it. Others do not use enough water.

My method of passing the tube is through the left nostril. Hemorrhage is sometimes produced, but I have yet to see any bad after effects from this slight hemorrhage. In most cases the tube can be passed and withdrawn without causing any hemorrhage. I have encountered a few mules on which it was impossible to pass the tube due to some obstruction in the nostril. I have never decided what it is. Occasionally this obstruction is found only in one nostril, and the tube can be passed easily in the other nostril. I have made several unsuccessful attempts to pass the tube through the mouth after seeing other veterinarians demonstrate the oral method. The tube can be passed through the nostril quicker and with less disturbance to the animal than it takes to adjust the nose strap, speculum or whatever is used preparatory to the oral method.

Some go to the unnecessary procedure of twitching the animal. A horse or mule suffering abdominal pain very seldom offers any resistance to the tube, and any method of restraint other than a bridle, halter or rope is unnecessary.

It looks very good to the owner after seeing his mule roll and tumble in pain, to see him stand perfectly at ease as soon as the tube reaches the stomach and the sour contents begin to siphon. I believe in plenty of water and continue pumping and siphoning until the return flow is clear. Much gas returns through the tube, and it is seldom necessary to resort to paracentesis. However, when the animal continues to roll after the tube is in place, paracentesis will give almost immediate relief. After siphoning the stomach thoroughly, whatever medicine is used is pumped in through the tube and the tube withdrawn. In my opinion, this is the quickest and most satisfactory method of treating colics as we get them in the South and will result in fewer deaths.

Of course, if you are dealing with purely intestinal indigestion or impactions, the tube is not of any benefit, except in the administration of medicine. It is much easier to all concerned to administer medicine through the tube than it is to try to drench an animal.

You who do not believe in the tube, on your next postmortem examination, see what your medicine has done. You will find something like this—medicine floating on the surface of the stomach contents, sour yellowish fluid and then the grain. In gastric engorgement the stomach is inactive and the drugs do not mix with the contents; therefore, you are getting no results and might just as well pour the medicine on the ground for all the good it does.

Usually the Southern farmer tries all of the home remedies he, his negro tenants and neighbors know before he calls a veterinarian. Invariably one will find in every community a "natural born horse doctor;" although he has never studied veterinary medicine, he knows all about animal diseases through instinct and is always ready to offer his assistance to any farmer in distress. The remedies used are really amusing, and I always get a "kick" out of finding out what the owner has done for the patient.

The conversation over the telephone is something like this:

"Hello, Doc, I want you to come out at once as I have a very sick mule."

"All right, what's the nature of the case?"

"Oh, I don't know, there's something the matter with his kidneys, water bound or something.'

"How long has he been ailing?"

Usually the answer is from four hours to two or three days.

On arrival at the plantation, you are greeted by a large audience, and the "natural born horse doctor" is always present and full of suggestions as to what will give relief and what he would have done if he had had the "tools." When you produce the stomach tube, slip it into the stomach, siphon out all of their kerosene, soda, chicken dung tea, etc., along with the sour feed, the "horse doctor's" mouth drops open, his eyes get large and he has nothing to say. If you are fortunate enough to reach your patient before all of the "itises" set in, everything goes lovely.

More can be accomplished in an hour with a barrel of warm water (if that amount is necessary), a stomach tube and pump and very few drugs than you can do with a wholesale drug house at your command, and your fatalities will be far less. True, it requires some work, but it gets results, and results are what we are after.

This is quite a discourse on our friend, the stomach tube, but I have read too much literature to sit idly by and say nothing in its defense. You antis, if you are afraid to try it on your patients, get an old plug horse, lock yourself in a barn and carry on a little secret practice. The more you use the tube, the better you will like it.

H. A. Burton

Alexandria, La.

NEO-ARSPHENAMINE IN PERIODIC OPHTHALMIA

In thirty-three cases of moon blindness, none of which had advanced past the second stage, treated with Neo-Arsphenamine, I have failed to get any favorable results whatever. In one case, I administered three doses, costing the owner of the animal $15.00.

I have read reports on encouraging results following such treatment, but I failed to obtain benefit in a single case, and feel that some of the reports were misleading.

I should like to see my report published, because there are thousands of doses of the drug sold and used for this purpose, and I should appreciate hearing from others who have tried it and what results were obtained.

C. E. Larsen

Tilden, Neb.

THAT WORD "COLIC"

I recently read somewhere in veterinary literature that some fellow was advocating eliminating the word "colic" from our vocabulary. Professionally, of course, we have the privilege of adopting or discarding any word that does or does not come up to our standard of medical terms. But permit me to say right here that if there be one among us who wants to commit professional suicide or lose what prestige he may have, I know of no quicker or surer way that he can do it than to tell the usual bunch always automatically present around a sick horse that there is no such thing as colic, and what would be still worse, try to make them believe it.

Besides the near neighbors, the "good stockman" of the community is always there when the Doctor arrives. He would have you believe that his presence is only casual. But while you are busying yourself getting ready to administer something to the ailing horse, if you will keep one ear open, you will hear the twelve-year-old boy of the family, Willie or Johnnie, tell about something that happened early that morning when he was going over to the "good stockman's" place. To figure out the rest is easy, as it is plain that the good stockman has been sent for first, and after exhausting all of his remedies and those of all of the neighbors and the poor horse has been suffering for six or eight hours, they then hold a council, and it is decided to call the Doctor. When he arrives, he is expected to give a small pill or a little white powder or red liquid and produce instant relief.

When the Doctor arrives, if he is the seasoned practitioner that he should be, he too often sees the hand of death already written on the face of the unfortunate horse, but he says nothing about what he has seen. He speaks in a friendly way to all present, shakes hands with those with whom he is acquainted, and then proceeds as did Dr. Doe in Dr. L. A. Merillat's article in the May issue (page 210) of Veterinary Medicine. I have gone through with that procedure many times and can recommend it to young practitioners, and when asked the inevitable question, "He's got the colic, ain't he, Doc?" I have found it saves time and useless

explanation to answer in the affirmative. If asked how I account for their remedies failing to give relief when they never failed before, I can always get out by saying, "Oh, well, possibly this is a different kind of colic from what you have been treating." They will all readily admit that there is more than one kind of colic.

To the mind of the layman, abdominal pain can be only one of three things—colic or bots or "his water." Professionally, we know this condition by some of the following terms: gastric flatulence, intestinal flatulence, engorgement, inflammation of the bowels, locked bowels, gastro-enteritis, gastric fermentation, etc. But when it comes to differentiating between these conditions clinically, the best trained professional minds that I have ever come in contact with become a little hazy. So why waste time trying to explain to the mind of the average man something that he does not and cannot understand?

I will close these brief remarks by repeating that there is nothing to prevent us from calling things by any name we want to, but I do hope that there is not any of us so blind to our own interests as to be so "professional" as to try to convince our clients that there is no such thing as colic.

Rembrandt Morgan

Winfield, W. Va.

CONTROLLING SHEEP DISEASES

A series of related sheep and lamb diseases which have caused western flock owners increasing losses can readily be brought under control by preventive measures. This announcement by the United States Department of Agriculture is based on the results of investigations by Dr. W. T. Huffman, Federal veterinarian, stationed in Idaho, who has worked in cooperation with Dr. J. S. Dade, inspector in charge for the State Board of Sheep Commissioners.

In the past the sheepmen have accepted most of the losses from strange diseases philosophically as one of the hazards of the business, but the increasing prevalence and virulence of the infection have caused them to seek relief. Acting on requests for assistance from flock owners in southern Idaho, the veterinary investigators have traced many of the losses to four forms of the disease known as necrobacillosis. These related ailments are: Foot rot, lip-and-leg ulceration, a venereal form of the disease affecting breeding stock, and liver infection of young lambs through the navel. In the form of the disease last mentioned, affected lambs invariably die—usually before three weeks old.

The monetary loss is also heavy for sheep affected with foot rot, since they can not travel and as a consequence are unable to obtain much feed. A similar result follows infection with lip-and-leg ulceration. Moreover, sick sheep fall an easy prey to coyotes and other range marauders. The existence of any one form of the disease may lead to other forms in the same band, a fact which sheepmen apparently have not understood. Accordingly, the investigators report, the infection of adult sheep must be controlled if flock owners wish to avoid the fatal liver infection of their lambs.

The trouble has been aggravated and scattered by the buying and selling of infected animals. One condition which makes the relation between all forms of the disease difficult for laymen to understand is the appearance of the different forms at different seasons. The venereal symptoms appear usually before and during the breeding season in the fall; lip-and-leg ulceration starts in the fore part of the winter; foot rot follows in the latter part; and lamb losses occur, of course, at lambing time and shortly afterwards.

Treatment for the first three forms of necrobacillosis consists in the use of antiseptics and astringents, combined with the prompt removal from the flock of affected sheep. Medicinal treatment of affected lambs is useless, as infection involves the liver and soon proves fatal. Disinfection of the navel for a day or two is sometimes beneficial in prevention, but the best means of control is to keep infection out of the flock.

"Where the soil is not sandy or otherwise porous," say the investigators, "we advocate the use of a layer of gravel at least two inches deep in the lambing sheds. When covered with straw, this makes a clean dry bed; and the soil is not worked up as occurs with dirt floors. While concrete floors for lambing sheds have been suggested, these are scarcely suitable for range conditions where the sheds are largely temporary or are on leased land. Gravel can be disinfected without difficulty; it is inexpensive and has proved highly satisfactory for the purpose."

"To give an idea of the extent of lamb losses," the report states, "one flockmaster who had a band of 3,000 ewes declared that this year the liver infection had been fatal to $1,000 worth of lambs. Another owner who was grazing 1,000 ewes lost 200 of them—20 per cent—from the foot-rot form of the disease."

ATRESIA ANI IN A PIG

On May 25th, a farmer living five miles south of town, called at my office with a small pig, farrowed April 23rd. The animal was badly bloated but showed very little distress. On examination, I found the rectum obliterated with no sign of an opening at all. The owner stated the pig nursed just before he left home. The animal was about the same size as the rest of the litter, and the farmer hadn't noticed anything particularly wrong with him until a few days before.

The pig seemed so lively that I suggested we let him go as he was and see how long he would live. Four days later the farmer called and said the pig seemed about ready to die and thought I had better hold a postmortem examination, which I did.

On opening the abdominal cavity, I found the rectum terminated abruptly just anterior to the pelvic cavity. It was filled with excrement to the limit as were the other large intestines as far forward as the cecum. The small intestines and all the other organs seemed normal. The large intestines were inflamed and the bladder was slightly inflamed, but there was no opening from the intestine to the bladder as I suspected I would find.

My reason for reporting this is my surprise to find this pig live and thrive for thirty-six days without a passage. This may not be a remarkable case to some, but it was to me.

T. J. Gilloon

Dyersville, Ia.

PICA IN SWINE

Pica or depraved appetite is a condition characterized by a tendency of the affected animal to consume other substances than food. This condition may also be manifested by a desire to lick foreign substances such as posts, boards, rocks, etc. Depraved appetite is apparently becoming more common, probably because of the depletion of the soil of certain mineral elements by continuous single croping. This condition is apparently not as common in swine as in other animals. Reports have been received of rather interesting forms of pica in swine. One veterinarian reported the supervision of a herd of swine that acquired the habit of eating wood, chewing fence posts and other like objects.

Pica is usually caused by deficiency of some elements in the feed and improper ration. The condition in the majority of instances is of dietary origin, however, some cases have been observed in which the cause was obscure. It may have its origin from a diseased condition of the teeth, catarrhal gastritis and there may be other disturbances sometimes associated with aberration of appetite. A few cases of pica have been reported in sows that were depleted by suckling a large litter of pigs.

Depravity of appetite is not difficult to overcome in the majority of cases, providing the cause can be identified and removed. Pica due to improper diet is usually corrected in a few days by providing the proper ration. In those cases in which the disease is associated with dyspepsia or diseased condition of the teeth, the correction of the diseased condition will overcome the abnormal appetite. Depleted sows that are suckling large litters of pigs when properly fed will not develop pica and when this condition occurs in such sows the provision of a proper ration suffices to overcome it.

A. T. Kinsley

ENUCLEATION OF THE EYE AND CLOSURE OF THE ORBIT IN DOGS

In my hands the success of this operation, both from the standpoint of the patient and the satisfaction of the client, has been well worth while. It is, of course, used only where the removal of the eyeball is indicated. The end in view is the closure of the orbit so that there will be no unsightly cavity left or discharge from the enucleated socket, and in this respect it is successful.

The operation may be done under complete anesthesia or a local anesthetic may be used well infiltrated throughout the field of operation. In the latter instance, one-half per cent Butyn in a 1-1000 solution of epinephrin is used.

An incision is made through the skin only, completely around the lids and one-eighth inch from their margins. The mucous membrane of the conjunctiva is then dissected from the skin. As soon as the dissection is started, forceps are attached to the lid margins and traction exerted. Forceps are also attached to the skin margin of the incision and traction applied. This materially helps in the rapidity with which dissection is accomplished. At the inner canthus where the upper and lower incisions meet, care must be used to cut deep enough to remove the glands situated there, so that there will be no discharges afterwards.

As soon as dissection has been carried back to the eyeball, both above and below, a pair of curved scissors may be used to sever the orbital muscles. When these are severed and the eye-

ball is attached only by the optic nerve and blood vessels, a ligature is slipped over the ball and drawn tight to control the hemorrhage, and these structures are severed.

The cavity is packed with a very narrow strip of gauze soaked in any favorite mild antiseptic. One end of the strip of gauze is allowed to protrude about one-fourth inch at the inner canthus. The eyelids are now sutured together, using No. 2 chromic gut and the interrupted sutures spaced three-sixteenths inch.

Dressings are applied daily by removal of the gauze and repacking with a gauze strip through the small opening at the inner canthus. Dressings should be used for about seven days. Thereafter the orbit is irrigated daily with a mild antiseptic through the small opening at the inner canthus, care being used not to exert much pressure so as to rupture the healing line.

If the sutures come out, they are replaced until union of the wound is accomplished. About three weeks are required to entirely heal and fill in the orbit. The healing line of incision may occasionally be touched up with tincture of iodin.

The orbit is thus closed with no unsightly cavity or annoying discharges and so far in every instance a very satisfied client.

H. B. Wintringham

Berkeley, Cal.

CANINE DISTEMPER NOT CONTAGIOUS

The topic of this article no doubt will arouse the antagonism of some, but it has nevertheless been the conviction of the writer for a number of years. Up until the last two or three years, however, I was not sure enough to muster courage to write on the subject.

Still, in spite of my observations to support the above contention, I admit it would be a bold statement to say that there is no influenza of dogs of a contagious nature, since contagious influenzas are common in so many other species of animals including man. I do say, however, that if such a disease does exist in the world, it is rare in this country, and I have never seen a case to recognize it.

That common condition in dogs referred to as distemper is invariably the result of improper feeding (especially wet, sloppy or soggy feeding) or garbage poisoning or what I like to call saprophytic gastro-enteritis. The reason for its "going through a kennel" and appearing to be contagious is that the animals in that kennel are all fed about the same way.

The resistance of the animal has been so reduced as to yield to the microorganisms which are under ordinary conditions harmless. Suppurative conjunctivitis can appear over night as a result of garbage poisoning, and later suppurative rhinitis and even pneumonia may develop.

What I have written of canine distemper, I believe to be true also of roup in chickens.

F. G. Steinbach, V. M. D.

Wildwood Crest, N. J.

CANINE DISTEMPER

In submitting the following, it is not with any pretense of claiming originality, but merely to demonstrate that success may sometimes be attained by unorthodox methods.

I was called to see a mature Irish Water Spaniel bitch, whose owner informed me that the animal had been sick for ten days, he thought with distemper. She was in a deplorable state, eyes and nostrils completely gummed up with dried and drying secretions, breathing labored, pulse rapid but weak, high temperature. The case was diagnosed as distemper of virulent type. Curative doses of a reliable canine distemper mixed bacterin were given, also febrifuges, laxatives, stimulants, and local eye and nose treatment. Result—the bitch died in three days.

A week later, a dog trainer, living some fifteen miles out on a lake shore, which should be well isolated, telephoned me he thought there was distemper in his kennels as one dog was almost dead and another was sickening. On arrival I found the almost dead dog showing symptoms identical with these observed in the bitch previously described, and with which it was subsequently proved this dog had been in contact while in transit to his training quarters. In spite of efforts to save him, he died within two hours of my visit.

The remaining dogs of various ages were inoculated, hygienic measures taken as to sanitation, etc., and the client advised to notify me should symptoms develop in the interval between the next inoculation. In four days' time all the dogs received the second shot of bacterin.

On the seventh day, the owner telephoned me that his best dog was down with the disease and was bleeding profusely from the nose. I found the dog in question certainly "had" the disease. The nostrils and eyelids were gummed up with the usual exudations, labored breathing, temperature 105.

I at once decided to "forget" it was distemper

and go right ahead on the local symptoms. A five-grain aspirin tablet was given, the nostrils were unplugged, and the eyes bathed with boric acid solution. Then both nostrils were sprayed with a solution of 2 per cent argyrol and the eyelids dressed with ung. hydrarg. ox. flav. 1 per cent. Instructions were left for both processes to be repeated night and morning. Internal treatment consisted of pulverized gentian, sulphur and potassium nitrate, equal parts of each, in one-dram doses twice a day. Milk, eggs, bovril were fed ad lib as desired. All the other dogs were also sprayed with argyrol solution per nostril once daily.

The third inoculation was subsequently given, and to my satisfaction, I found the particular dog under treatment was almost completely recovered. I attributed his recovery to the flushing of the nasal sinuses with argyrol, using an atomizer, and also the fact that the companion dogs did not develop the disease, after similar treatment, which I believe materially helps to destroy, or at least inhibit growth, of the organism causing this type of the disease.

Frank M. Wheatley

Fort Qu'Appelle, Saskatchewan

TUMORS OF THE VAGINA IN BITCHES

Occasionally the small animal practitioner meets with tumors of the vagina in Bull and Boston bitches, and one should be on the alert for this condition when a stud dog owner brings in a bitch stating that his stud cannot serve her. He swears by his stud that he never fails to serve a bitch when in heat. He will say that he tried this bitch with the stud several times but unsuccessfully. Further he will state that if his dog can't serve her no other stud can, claiming the bitch is too tight or too small.

Don't tell him to use vaselin or some other lubricant. Know your stuff. Put the bitch on the table when the stud man is present, using a vaginal speculum, and make an examination for tumors, which will be found to be more prominent during the period of estrum. While the bitch is on the table, advise an operation for removal of the tumors if present, the technic of which is as follows:

Thoroughly syringe and cleanse the parts with an antiseptic solution. Inject with Butyn to produce local anesthesia. The instruments used are scissors, forceps and curette. Control hemorrhage with forceps. Cleanse with cotton. For permanent removal of the tumors, it is very essential that the area of mucous membrane be excised all around the edges of the growth. Grip the growth with pressure forceps. If the growth is imperfectly removed, its return is usually rapid, and the bitch becomes useless for breeding. After care consists of the application of antiseptics.

Charles J. Gruber

Ft. Wayne, Ind.

ESOPHAGEAL CHOKE IN DOGS

Esophageal choke or obstruction occurs frequently in puppies and young dogs fed in litters, groups or packs, and is usually due to hasty gulping or swallowing of semi-masticated particles of small animal vertebrae in cooked and fragmented condition.

Symptoms: pronounced retchings, attempts and inability to swallow food except occasional liquids; and in some cases marked tracheitis, especially where spicula of bone wounds the trachea.

The treatment outlined in our modern textbooks is generally satisfactory, and if patients are seen in the early stages, I deem it good policy to stand the animal erect on its hind limbs while the attendant holds the forelimbs aloft, and a teaspoonful of glycerin or olive oil is administered orally, and the head steadied for a moment. In case of failure of relief by this method, apply the probang or perform esophagotomy. Several case reports on this condition may prove helpful.

Case No. 1: Grade Bull Terrier and English Setter cross pup, aged ten weeks. Choked badly for four days and suffered with tracheitis. The owner attempted treatment with liquids, believing he had a case of bronchial pneumonia. The obstruction was lodged in the middle of the cervical region. The patient was secured on table and anesthetized, seat of operation shaved and disinfected. An incision was made over the upper border of the obstruction, which was grasped with an old Civil War bullet forceps, a present from a friend, Dr. Wade G. Hunt of India. Application was made of antiseptic solution and surgical dressing powder, a wad of cotton and plenty of bandage covering the entire neck. The dressing was secured with safety pins and renewed once daily. The dog was fed milk and rice for one week, then chopped beef, milk and crackers. Recovery satisfactory.

Case No. 2: Airedale pup, aged about eleven weeks. Choked four days. Position, condition and treatment similar to Case No. 1, except there was no tracheitis. The owner took the dog home, and it made a quick recovery.

Case No. 3: Boston Terrier, female, aged

twenty months, seen in Dr. Glenn's hospital while making a friendly call. He had to make the operation close to the base of the neck and removed the obstruction that way as it was lodged close to the entrance of the chest and required some fishing to reach it. The wound was sutured, but the sutures tore and sloughed out in a short time. It was then treated as an open wound. Recovery O. K. but not so rapid as in the puppy cases. Age is generally an important factor in the healing of these wounds.

James A. Waugh

Pittsburgh, Pa.

FILARIA IMMITIS IN DOG

A case report by Dr. Nalls in the April issue of Veterinary Medicine, "Filaria Immitis Cause of Post-Operative Death in Dog," is of special interest to me for the reason that it reminds me of an incident that occurred in my own practice about thirty-five years ago and which was somewhat along the same line as the case of Dr. Nalls. For that reason I will relate it and not for its general interest to the profession as I consider it unimportant.

I was called one morning to the residence of a prominent citizen of Honolulu, who gave me the following story: "I have a hutch of rabbits that at night have been disturbed by strange dogs. Last night I heard noises and went to the yard, where I discharged both barrels of my shotgun skywards to frighten off the intruders. This morning my neighbor has found his Gordon setter dead in the yard close to my fence. He accuses me of shooting the dog and threatens suit. I certainly could not have shot the dog, and I want you to make a postmortem examination and find the cause of death."

The dog had been buried, so I had the carcass exhumed, took off the pelt, looked carefully for gunshot wounds, but found none. I then opened the abdomen and found quite a lot of clotted blood in which were a few roundworms. These I found to be Filaria immitis. I next removed the heart and found the right cavity filled with an interlaced bundle of the same kind of worms. My report stated that death was due to rupture of the pulmonary artery as a result of the animal being affected with heartworms. The case was taken into court, but on the strength of my testimony, the defendant was discharged. Had this dog been in good health, and not troubled with Filaria immitis, shock from discharge of the shot gun would not have proved fatal.

I might add that during my earlier years in these islands, Filaria immitis in dogs was quite prevalent. In later years, however, it is not nearly so common. This I believe is due to the concerted efforts that have been made in the last few years to eradicate mosquitoes.

A. R. Rowat, D. V. S.

Honokaa, Hawaii

THUJA IN THE TREATMENT OF WARTS AND TUMORS

(Report awarded fourth prize)

For several years I have been using thuja in the removal of warts and other tumors from animals, relieving me a great many times of a tedious and dangerous surgical operation. I am reporting one case out of the numerous cases in which I have used it with success.

On August 21, 1924, a two-year-old Pekinese Spaniel was presented to my hospital for me to remove the eyeball and a fibrous growth that completely covered it. I was asked my fee for the operation and keeping the patient at the hospital. I stated my price for doing the work, but as the dog was in very bad condition, I was certain the animal would not stand the anesthetic and notified the owner to that effect, advising him that the dog would have to be physicked and given tonic treatment for a few days before the operation, to which the owner consented.

I went right to work to give the dog the alterative treatment, and while waiting for the patient to get strong enough to stand the operation, I decided to try a plan that possibly would obviate the operation as I had done several such operations before and was never entirely satisfied with the results. I had never used thuja before on growths of the eye, but as I had had such good success in removing warty growths on other parts of the body with it, I decided to try it as it would not affect the surgical operation anyway should such procedure be necessary.

I began by using the thuja ointment twice a day, and on the fourth day it had taken the growth down so much that I could see a little of the eyeball, which could not be seen when the patient came to the hospital. On the fifth day, the owner came to see if I had operated on the dog as he was anxious to see if the animal had survived the ordeal. I asked the owner if it would be satisfactory if I cured the animal without an operation and charged the same fee I asked for removing the eyeball. "Sure," he said, but his family physician had said that the case could not be cured any other way than by operation and the quicker it was done the better. I was rather of the same opinion myself.

However, I kept up the treatment of thuja

once a day until September 7th, when the growth was so nearly gone that I discharged the patient from the hospital, giving the owner a one-ounce jar of thuja ointment with instructions to apply it once a day for a while longer. This was done with the result that at the end of thirty days all traces of the growth had disappeared, and the treatment was stopped. While the dog's sight is greatly impaired, he can see a little, and the eyeball looks good. Besides there is no cavity to catch dirt, etc., as there would have been if the eyeball had been enucleated.

The thuja I used at first was Jensen-Salsbery's, but as soon as the growth was so reduced that I could see the eyeball, the preparation was changed for Long's thuja, put up by Lloyd Bros. of Cincinnati, Ohio, as this has no alcohol in it and is not too strong for the eyes. This Long's thuja I have used for a great many years for trachoma and granular lids with the best of success; in fact, I never use yellow oxid of mercury any more.

G. W. Browning

Mobile, Ala.

VETERINARY PUBLICITY

This has been a question I have been thinking about for the last fifteen years, realizing that the profession was not receiving the popularity we thought it did when we were going to college or that which other even lesser professions and trades do.

Ethically, publicity or advertising is taboo or has been. But all lines of business and professions are doing it directly or indirectly, and as education is the means by which intellectual thinking and reasoning propagates, it behooves us to impart some of our knowledge to the community in which we live and practice.

The big problem to my mind is just how. First, we must eliminate the pronoun "I." It is most disgusting to hear a man talk continually about what "I did, I saw and I was." People will find that out soon enough.

Veterinary publicity might be conducted in several ways, if the state or provincial associations took it up and clothed it with interesting illustrations and incidents to catch the eye of casual or indifferent readers. The activities of federal inspectors in eliminating diseased meat. Milk inspection whereby the cause of an epidemic was traced and stamped out. Tuberculosis eradication. Tuberculosis free herds causing a monetary benefit to the producer. Poultry inspection and diagnosis. Fox ranch inspection. Surely there is no lack of material.

Channels for publicity are also numerous, such as taking part in farmers' and poultrymen's meetings, boys' calf and pig clubs, agricultural fairs. One will be asked many times for opinions and for information, not the kind perhaps one can cash in on directly, but eventually it will come. A state or provincial association might give a series of talks over the radio, as everything is heard over it from advertising a new washing powder to medical health talks. And by no means forget the local paper.

In my own case I found probably the first case of hemorrhagic septicemia that occurred in Southern Saskatchewan and traced its origin pretty clearly. I therefore inserted an item in the local paper stating the symptoms and probable loss to the community. Inside of a week, I had a call about thirty miles south and found a real outbreak. This man stated he had read my article in the paper and therefore called me. Otherwise, he had made up his mind it was blackleg and was sending for blacklegoids.

We as veterinarians often experience our most brilliant successes in an obscure pasture or stable with a doubtful client standing by, and there it dies a natural death as there is no one to understand its significance and pass it along. We do not have sufficient income to maintain an elaborate office and a telephone girl to give a prosperous or busy impression as in a medical man's office, nor do we have nurses or assistants to witness our successes and recommend them as do medical men. Perhaps our greatest source of advertising comes from a violent case of colic that would probably have recovered in a few minutes if nothing had been done.

Nevertheless, we must educate our clients up to the point where they observe the small things or the beginning of trouble. Then our practice will increase and so will our success and prestige. The most satisfactory clients I have ever had were graduates of an agricultural college and good business men.

These are just a few ideas that perhaps have occurred to many and would necessarily have to be hashed over and committees formed to garner material, and in case of radio lectures, a good reader with a good radio voice is essential. It appears to me that there would be a fine chance to try this out at Portland as the Morning Oregonian has a very fine broadcasting plant. Hoping there is a better time coming.

J. E. Bennett, B. V. Sc.

McBride, B. C.

THE VETERINARIAN

During the last three months numerous articles have been written concerning the veterinarian's lot and the future in store for a young man contemplating this profession as a life work.

If one were to collect testimonials from different members of other professions, one would get about the same varieties of opinions.

I once attended a wedding in a small house, and the men congregated in the cellar where they spent the entire evening smoking, drinking beer and arguing which one had it hardest. I was only a small boy at the time, but I distinctly remember how each one considered his profession or occupation the worst. There were a couple of physicians, a lawyer, a baker, mechanics and office men there.

As a boy of eight years of age, to me the veterinary profession was about the loftiest and most noble to which any boy could aspire. Of course, at first my parents did not take me seriously, but upon my approaching high school age, they called my attention to a certain veterinarian (a graduate of a good school) who went into the feed business, and it was understood he treated horses free of charge if the owner bought feed from him. This was enough to throttle the enthusiasm of a boy, but I said, "Pop, I'm not going to be that kind."

After going through high school, I was more determined than ever to become a veterinarian, and in 1912 I graduated from the veterinary school of the University of Pennsylvania. Since then a brother, three years younger than I, decided to follow my example. He in turn graduated from the same school and has now practiced seven or eight years and has accumulated between $50,000 and $60,000, nearly all of which he earned in his practice and by shrewd investments. This brother says to his younger brothers, "Boys, don't study veterinary medicine."

The third brother is now attending the veterinary school of the University of Pennsylvania, and a fourth brother going to high school intends to follow his brothers in the same profession.

I have a fine boy, nine years old, who says he will be a veterinarian. If he will be as happy as I am in this noble calling, I shall be delighted to have him enter the ranks of our beloved profession. I thank God I have seen the realization of my boyhood dreams.

Frederick G. Steinbach

Wildwood Crest, N. J.

Dr. J. R. Fuller, Walla Walla, Wash., sent in the photograph from which the above reproduction was made. He states that scenes like this, a combined team of thirty-three mules at work, may be seen in the wheat fields of that section at the time of the A. V. M. A. meeting in Portland, Ore. Dr. Fuller further states that the horse is still king in the Inland Empire, being used about as much as ever, and the best part of the veterinarian's work is still with the horse.

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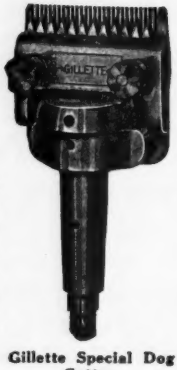

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DEATH OF DOCTOR BOUCHER

Dr. W. A. Boucher died at his home in Pasadena, Cal., May 22nd, his demise occurring suddenly due to heart trouble. Dr. Boucher was born in Ottawa, Canada, April 7, 1876. He graduated from the Ontario Veterinary College in 1901, and the following year went to Southern California, where he established himself in practice at Fullerton. In 1907 he removed to Pasadena where he practiced and conducted an animal hospital adjacent to his residence. Dr. Boucher was fond of horses and dogs. He was also an expert rider, a polo player, a golfer and was interested in all athletic sports. He took an active part in the Elks' Lodge, was a member of the Corona Lodge of Masons, of the Scottish Rite consistory, also of Al Maleikah temple, Nobles of the Mystic Shrine. He was a director of the Boys' and Girls' Aid Society and a member of the Pasadena Advisory Board of the Salvation Army. He was a former president of the California State Veterinary Medical Association, and at the time of his death was a member of its legislative committee. He is survived by the widow, his father and mother, and one sister.

Dr. W. A. Boucher

The Sioux City Serum Co. is carrying on an extensive campaign of advertising in farm papers of the middle west, setting forth the advantages of vaccinating hogs against cholera and advising farmers to call their veterinarian to do this work. Among the many interesting facts brought out in these advertisements, it is stated that there are 11,000,000 fewer pigs this year, which means high prices and makes it worth while to save all of them. Also it is pointed out that from $30,000,000 to $40,000,000 is lost annually due to hog cholera.

VETERINARIAN'S INCOME $20.00 A MONTH IN RUSSIA

According to press reports last November, the official wage scale of soviet Russia showed that doctors of human medicine in that country received the equivalent of $42.00 a month, figured at the rate of 51 cents for one ruble. This is the highest amount in the scale. Secretaries compose the only other class of workers who may get this pay, their wages being listed at $28.22 to $42.00 a month. Next come accountants who are listed at $28.22 to 35.44; hospital managers, $25.20 to $35.44; fire chiefs, $28.22 to $31.40; warehouse managers, $20.21 to $31.40. Veterinarians, dentists, translators and interpreters receive the same rate of pay, $20.21 to $28.22, a month. First class typists are listed at $20.21 to $25.20. There are seventy-one other wage classifications, ranging from laborers, $7.35 to $8.40 a month, to bookkeepers and chief electricians, $15.75 to $25.20 a month. The report also states that the cheapest suits of clothes cost $100 and shoes $20. The established working day is eight hours for manual workers and six and a half hours for brain workers.

UCCos Cresolis

Approved Disinfectant

B. A. I. Order No. 273

50 gal. drums	$1.30	per gal.
30 gal. drums	1.35	per gal.
10 gal. cans	1.60	per gal.
5 gal. cans	1.75	per gal.
1 gal. cans	2.00	per gal.

Ask us to quote on the following:

Swine Vermifuge
Liquor Cresolis Compositus, U. S. P.
Circle A Dip
Puro Pine Disinfectant
Iodine 3½% "Approved"
Iodine, Tincture, U. S. P.
Oil of Chenopodium
Antiseptic Olive Liquid Soap
Fly Relief, liquid

We guarantee that any article you may purchase from us will give you the satisfaction and service you have a right to expect.

United Chemical Companies
KANSAS CITY, MISSOURI

GOSHEN MINERAL YEAST

(CANINE)

Contains 15 per cent pure dry yeast combined with select soluble lime salts. A very simple and effective adjunct in the treatment of digestive disorders and skin affections in dogs. A valuable preparation for building of bone in puppies and will positively prevent the development of Rickets.

Veterinarians and Boarding Kennels may send their boarders home full of pep and with a glossy coat by mixing a small amount of this preparation with the regular ration.

Recommend it to the Fox Breeder. It will add vigor to the young fox and luster to the coat of the mature one.

DIRECTIONS—1-2 to 1 teaspoonful mixed with feed twice daily.
Put up in 1 lb. package; 5 lb. packages; 10 lb. packages

WRITE FOR PRICES AND DISCOUNTS

Have you written for copy of our new illustrated catalog?

J. F. DeVINE LABORATORIES, Inc.

GOSHEN NEW YORK

CHANGES RELATIVE TO VETERINARY OFFICERS, REGULAR ARMY

Captain Oness H. Dixon, Jr., V. C., is relieved from duty at Fort D. A. Russell, Wyoming, and will report to Iowa State College, Ames, Iowa, for duty on or about May 15, 1925.

Captain Samuel G. Kielsmeier, V. C., is relieved from duty at Fort McPherson, Ga., and further temporary duty at Camp McClellan, and will report about June 1, 1925, to the Commanding Officer, Fort Bragg, N. C., for duty.

Captain Wm. H. Dean, V. C., is relieved from duty at Jefferson Barracks, Mo., effective on or about July 10, 1925, and will report to the Commanding Officer, Fort Riley, Kansas, for duty.

1st Lieutenant Nathan M. Neate, V. C., is relieved from duty at Camp Marfa, Texas, on or about July 10, 1925, and will report to the Commanding Officer, Jefferson Barracks, Mo., for duty.

The following veterinary officers are relieved from duty at their respective stations and will report to the Commandant, Army Veterinary School, Washington, D. C., on or about September 1, 1925, for a course of instruction:

Captain Kenneth E. Buffin, Ft. Meade, S. C.

Captain George J. Rife, Ft. Sam Houston, Texas.

Captain Howard M. Savage, Ft. Snelling, Minnesota.

Captain S. A. Grover, Ft. Bragg, N. C.

Captain Jesse D. Derrick, Presidio of Monterey, Cal.

Captain P. H. Hudgins, Presidio of San Francisco, Cal.

Captain C. E. Cook, Ft. Hoyle, Md.

"Making Animal Tagging Easy"

KETCHUM CLINCHER

The new self-piercing and self-clinching bright STEEL tag for Cattle, Sheep and Hogs—that stays in. Three sizes. Numbered and Lettered to suit. Write for descriptions and prices.

KETCHUM MFG. CO., Dept. A, Luzerne, N. Y.

1st Lieut. James E. Noonan, Ft. Benjamin Harrison, Ind.

VETERINARY RESERVE OFFICERS

Additional Reserve Officers:

Lt. Colonels:

Eagle, Richard F., 2137 W. 110th Street, Chicago, Ill.

Majors:

Brown, Harry Wilbur, Sunbury Road, R. F. D. No. 1, Gahanna, O.

Captains:

Barr, Albert Clyde, 3227 Tracy Street, Kansas City, Mo.

Schlegel, John Otto, 2411 E. 11th Street, Kansas City, Mo.

White, Wm. Tisdale, 14 Edinboro Place, Newtonville, Mass.

Williamson, Wallace LeRoy, 221 Albany St., Ottumwa, Iowa.

1st Lieuts:

Bissell, Roy C., 1618 S. 3rd Ave., Maywood, Ill.

Brady, Ezra M., Tangney Hotel, Spencer, Iowa.

Heninger, Fenton C., Newark, Ill.

Major, John Perry, 717 Rutledge St., Spartanburg, S. C.

Norton, Robert S., Velva, N. D.

Weller, Emil E., 502 W. 177th St., New York, N. Y.

2nd Lieuts:

Cummings, Wm. P., 1607 N. 2nd St., Perry, Ia.

Harkavy, Maurice, Aiken, S. C.

Hill, Anson Harris, 127 Kansas City Street, Rapid City, S. D.

Sisk, B. H., Jefferson Barracks, Mo.

Telford, Roswel A., Parkersburg, Iowa.

Whitehill. N. H., 107 2nd St., N. W., Washington, D. C.

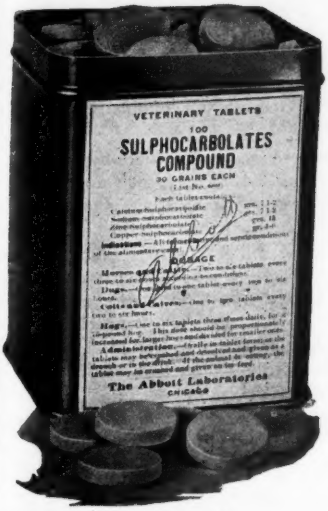
Promotions:

Campbell, Walter Earl, Main Street, Bel Air, Maryland, promoted to grade of Captain, Vet-Res.

Kennedy, Rufus Terry, 209 S. Poplar Street, Bucyrus, Ohio, promoted to grade of Captain, Vet-Res.

Denman, Clarence Bukey, R. F. D. No. 2, Newark, Ohio, promoted to grade of 1st Lieut., Vet-Res.

Abbott's Sulphocarbolates Compound



The Ideal Intestinal Antiseptic. For Necrotic Enteritis of swine, intestinal fermentation and diarrheal diseases of animals it is indicated.

Order now and be prepared.

It is supplied in powder form, 30 gr. tablets for large animals, 5 gr. tablets for small animals, and in a special tablet, either with or without mercuric chloride, for poultry.

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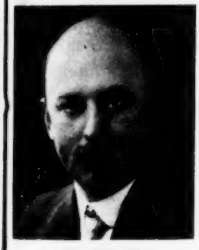


J. R. Mohler

The honorary degree of D. Sc. was conferred on three veterinarians in the Bureau of Animal Industry, Washington, D. C., at June commencements. Those receiving the degree are: Dr. John R. Mohler, Chief Bureau of Animal Industry, from the University of Pennsylvania; Dr. Brayton H. Ransom, Chief, Zoological Division, from the University of Nebraska; Dr. Maurice C. Hall, Zoologist, Zoological Division, from Colorado College.

M. C. Hall

Dr. B. J. Eno has moved from Somerville, Mass., to New York, N. Y.

Dr. W. B. Stegner, formerly at Lincoln, Neb., is now located at David City, Neb.

Dr. A. O'Toole is now located at Arnold, Kansas.

Dr. H. E. Kemper has moved from Carrizozo, New Mexico, to Phoenix, Arizona.

Dr. T. J. Wilson has changed his location from Mesa, Ariz., to Wessington Springs, S. D.

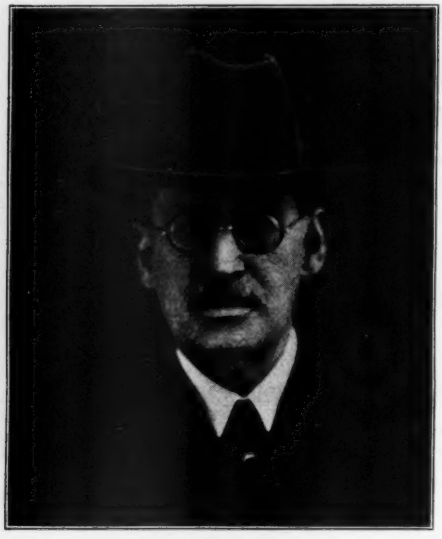
Dr. and Mrs. W. G. Sarver of Tiskilwa, Ill., announced the marriage of their daughter, Imogene, to Mr. Albert E. Lee, June 6th.

THE FORCE OF ADVERTISING

"I put no limit on the force of advertising. It is the single force which has brought America to its present position of prosperity and world dominance in trade. For advertising creates desire. In order to satisfy desires one must work, and in working one produces more things which must be sold and in turn more advertising results, and more desires are created and satisfied. Anything that increases desires increases prosperity."—Extract from talk by Albert D. Lasker at the New York Advertising Club, March 27.

BROOKLYN LOSES AN APOSTLE OF GOOD WILL

Some thirty-nine years ago, there came to this country from Ireland, by way of Scotland, one of the most unique characters that has ever ministered to the ills of animals. On arrival here, he entered the New York Veterinary College, and three years later, became the proud



Dr. Wm. J. McKinney

possessor of a Diploma of Veterinary Medicine. From that day Doctor William J. McKinney has been a familiar figure in veterinary circles of the Metropolitan District.

Born in County Derry, Ireland, from early youth he was regarded as an expert horseman, winning the Ulster Open Steeplechase three consecutive years, and taking second place the year following.

As evidence of his recognized ability, he was selected as judge at the Northwestern Horse Show which was an unusual honor at his age in such an exacting community, being first appointed judge at the age of twenty-one. His native ability coupled with his veterinary training brought him immediate success in the practice of his profession, and in a few years, Doctor McKinney had built up one of the largest practices in New York City. Business men and friends alike admired him for his integrity, his fairness to his fellow practitioners and his reliable business principles. His early love for the sporting side of horse life was manifest in many ways, and he took great delight in teaching horses to do tricks. With no little pride, he would show off to his friends a horse he had taught to drink when told to do so.

(Mac being a rabid "Prohib" never offered his pupil anything but water), proving the fallacy of the old adage, "You may lead a horse to water, but you cannot make him drink." Had old Noah had him as an advisor when loading the Ark, things mundane might now be different.

After two score years of a busy and useful life, he has packed his knapsack and turned his face to the placid Pacific where fancy runs riot and the glorious sun halts in the heavens long after he has forsaken Pilgrims' Shores. Doctor McKinney leaves in his wake friends who will miss his cheery personality; the subtle blending of the heather and the shamrock which was ever present; whether he be discussing "Case Reports" or outdoing a rival's story. His wit and philosophy never forsook him. At times he used them as a mask to hide his heart's heaviness when death's hand took from him his loved ones.

He has always been a willing worker for veterinary advancement and was twice chosen as president of his state association.

To those in the distant land he goes to greet, we commend him as a genial fellow man, who seeks to do good rather than evil; who delights in friendship rather than envy, and who glories in the advancement of those who go straight. Treat him as a friend and you will not be disappointed.

Uncle Sam now delivers his mail at 1402 Victoria Ave., Los Angeles, California.

J. F. DeVine

LEXINGTON INVITES A. V. M. A. MEETING IN 1926

Last year, shortly before the meeting of the A. V. M. A. at Des Moines, Iowa, an invitation was sent through the secretary and members of the executive board, asking the association to hold its 1926 meeting at Lexington, Kentucky. Dr. W. W. Dimock, Head of the Department of Veterinary Science, University of Kentucky, calls attention to the fact that the invitation still stands. Members will do well to give their support in favor of **Lexington as** a meeting place, since the location and facilities offered by that city are excellent, while it represents a section of the country where the annual convention has not been held heretofore.

Veterinary Zonite

The modern veterinary antiseptic

In the treatment of breeding diseases

The following is an excerpt from our new booklet now ready for distribution to the profession

—A copy will be forwarded to you on request

Vaginal and Uterine Douche: In the treatment of various breeding diseases resulting in the various forms of metritis, pyometra, cervicitis, vaginitis, etc., Veterinary Zonite is a valuable agent. The rapid clearing up and disappearance of the odor of the profuse vaginal discharge usually results from the use of one ounce of Veterinary Zonite to a quart of warm water as a daily uterine and vaginal douche and later reduced in frequency as the case progresses and conditions seem to indicate. The proteolytic action of Veterinary Zonite stimulating normal vaginal secretions, which in themselves have powers of resistance to bacterial contamination and infection, is especially desirable.

In the control of specific infections of the uterus, such as Streptococcic Metritis in mares, many Veterinarians prominent in this field of practice have obtained excellent results through the use of Veterinary Zonite in 1:20 or 1:30 dilutions. In the treatment of uterine infections the strength of the dilutions and the frequency of the irrigation is dependent upon the results in evidence. In many instances of valuable animals the treatment has been continued over a period of one to two years before complete recovery was effected. As a vaginal douche after parturition and in cases of pyogenic infection, Veterinary Zonite in the above dilutions produces excellent results.

Irrigation of the Male: In the control of breeding diseases in animals the male is quite as important as the female. Thorough irrigation of the sheath in bulls before and after service is important. In stallions the stud groom should thoroughly cleanse the sheath and wash the stallion in a 1:30 or 1:50 solution of Veterinary Zonite. This has proved to be of especial value in the control of infection and the transmission of infection from animal to animal.

Sold exclusively to the veterinary profession in one-gallon rubber-stoppered glass containers. Net price, $4.00—*delivered to you.* This rate can apply only upon receipt of cash or money order in advance.

All orders or communications should be addressed to

THE CASSIUS WAY COMPANY

Veterinary Zonite Division

100 East 45th Street New York, N. Y.

The accompanying picture shows a portion of the grounds where the Mississippi Valley and Eastern Iowa Veterinary Associations will gather at West Liberty, Iowa, on July 16th. Veterinarians and their families are invited to attend this picnic and enjoy the day on a real shaded fair ground, visiting with their fellow veterinarians, rooting the boys on the diamond or watching a close finish of the ponies. Bring

the wife and the kiddies, don't forget the picnic baskets, and you know at noon we eat. Roads Nos. 7 and 74 always in good shape, and they lead to West Liberty, Iowa, on Thursday, July 16th.—Entertainment Committee.

Dr. George M. Paxton died at Little Rock, Arkansas, from peritonitis, May 23rd. He was born at Columbus City, Iowa, in 1884, and removed to Arkansas with his family at the age of fifteen. He graduated from the K. C. V. C. in the class of 1917, and immediately entered the U. S. Bureau of Animal Industry and was assigned to tick eradication duty in Arkansas. After serving a few months in this capacity, he resigned his position to enter the Army Training Camp and was commissioned 1st Lieutenant, Air Service. He was Squadron Commander at Kelly Field and later Commander of the American Air Force at Dover City, England. After making an enviable army record, and at the close of the war, Dr. Paxton was honorably discharged and returned to the Bureau of Animal Industry. He was assigned to tick eradication in Texas and after a short time in that state was transferred to Louisiana where he was Inspector in Charge of the Bureau forces from September, 1921, to March, 1925. At the time of his death, Dr. Paxton was Traveling Inspector on Tick Eradication out of the Washington office. Dr. W. A. McDonald, Inspector in Charge of Tick Eradication at Little Rock, who prepared this obituary, states that Dr. Paxton was of high moral character, conscientious and energetic, and his death marks the loss of a member who was an honor to the profession.

Dr. J. A. Winkler, Newport, Ky., Secretary of the Kentucky Veterinary Medical Association, announces that the annual meeting will be held at Glasgow, Ky., July 8th and 9th. They will meet at the Hill Crest Country Club, where an old fashioned Kentucky barbecue will be served on the evening of the first day. On July 9th a visit will be made to Mammoth Cave. All veterinarians and their families are invited.

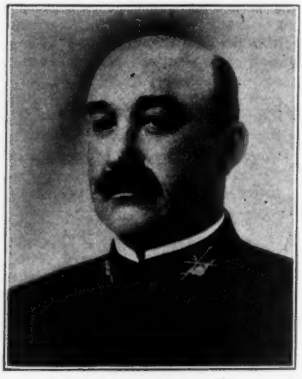
Dr. Walter G. Port gives his new location as Paullina, Iowa. He was formerly at Primghar, Ia.

Dr. E. Brainard has changed his location from Tucson, Arizona, to Colorado Springs, Colo.

Dr. Floyd E. Hull is now located at Downs, Kan.

Dr. F. H. Sharp has moved from Colorado Springs to Denver, Colo.

Dr. Alexander Plummer of Chico, Cal., died May 10th, at the government hospital at Palo Alto, Cal., after an illness extending over several months. He was 60 years old and had spent many years in the United States army as a veterinarian. Dr. Plummer was born in Canada June 26, 1865, educated in the public schools of Wisconsin and graduated from the Chicago Veterinary College, after which he was in private practice for a number of years. He entered the army Oct. 20, 1892. He was a veteran of the Spanish-American war, the Boxer uprising in China, and otherwise had had a long and honorable career in the service. While on the Mexican border with the army in 1914, he was honorably retired on account of ill health. The funeral was held at San Francisco, burial with full military honors taking place at the Presidio cemetery May 12th.



Dr. Alex. Plummer

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The THINKING VETERINARIAN knows he must use a dependable serum if he is to warrant the confidence of his clients and maintain his good reputation in the locality where he builds his practice.

Insist upon the U. S. Gov't seal for your PROTECTION!

SIHLER SERUM COMPANY 210 Central Avenue Kansas City, Kansas

Dr. F. W. Buckle, formerly at Caledonia, Ontario, is now located at Glanford, Ont.

Dr. J. S. Matteson has moved from East Lansing, Mich., to Parnell, Mo.

Dr. T. P. Skinner has changed his location from Smithville, Mo., to Kansas City, Mo.

The report of Dr. W. H. Seeman, bacteriologist of the Louisiana state pathological and bacteriological laboratory for 1924 shows that during the year 124 dogs' heads were examined and sixty-six of these were positive for rabies.

Reports from South America state that sheep raisers in the province of Chubut in Southern Argentina, are being forced to destroy sheep by the thousands, as the grass on the pampas is insufficient to feed the immense flocks through the dry summer. The territory is approximately 800 miles wide and reaches from the Atlantic to the Andes. It is one of the greatest wool-producing districts in Argentina, but it has no packing house nor railroads connecting any of the districts with refrigerating plants. It is estimated that there are 2,000,000 sheep there now. For sheared animals on the hoof the price has been less than $1 each this season, because the consuming market is limited to the oil fields and small towns on the coast. This leaves the sheep men the alternative of destroying part of the flocks to save the risk of seeing all starve.

Dr. C. E. Nicks, who recently located at Selma, Ala., has completed the erection of a small animal hospital.

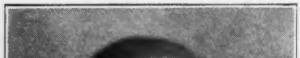
Dr. A. R. Kroll has moved from Black Duck to Kelliher, Minn., where he states he is making his quarters temporarily.

Dr. Loran Brush of Piqua, Ohio, recently returned to his home from a tropical trip.

Dr. J. H. Schrader has bought the practice and hospital of Dr. E. B. Rader at Oxford, Iowa. Dr. Rader has retired from practice, and he and Mrs. Rader have entered the Palmer school of chiropractic at Davenport, where they are taking the 18 months course.

DOCTOR BROWN CONTRIBUTES TO VETERINARY PUBLICITY

Dr. J. W. Brown of Ft. Scott, Kansas, is the author of an article entitled "The Work of the Veterinarian As It Should Be," which appeared in The Kansas City Star, Sunday, May 24th. Among the many veterinarians who called attention to this write-up and commented favorably on it were Drs. A. T. Kinsley, R. R. Dykstra, and J. H. Guilfoil.



Dr. J. W. Brown

Doctor Brown is a graduate of the Veterinary Division of the Kansas State Agricultural College. He was awarded second prize in the Veterinary Medicine case report contest last February, for his discussion entitled, "Sidelights on Tuberculin Testing."

The following paragraphs are quoted from his recent article in the "Star":

"Are our cities, especially the smaller cities and towns, using their veterinarians' professional knowledge to their best advantage? This profession belongs to the same class of public service as that of the human physician.

"The future of the public health of the civilized world lies too greatly in the hands of this profession for the laity to be so ill-acquainted with it.

"The present day graduate veterinarian is as far advanced over the 'horse doctor' of a few years ago, professionally and socially, as the graduate physician today is over the old midwife.

"The veterinarian now keeps abreast of the times, bears himself with pride, and takes a leading part in various civic organizations fighting for sanitary improvements and the public health. But the public has not wholly awakened to the scope and importance of his work, and the public too often fails to appreciate the real merits of his profession."

The spring meeting of the McLean County Veterinary Association was held at Bloomington, Ill., May 27th. Dr. Frederick R. Whipple of Peoria, Ill., spoke on small animal practice with a discussion by Dr. A. E. Campbell of Rantoul, and Dr. C. W. McLaughlin of Melvin. Dr. A. T. Peters of Peoria, presented the subject of nutritional deficiencies, their cause and treatment, followed by a general questionnaire. Dr. J. S. Koen, Secretary of the association, outlined plans for the summer meeting of the state association. Dinner was served in the evening, followed by an address by Hon. Carl Vrooman of Bloomington, who was Assistant Secretary of Agriculture during President Wilson's administration.

THE NEXT MISSOURI VALLEY MEETING

Dr. E. R. Steel, Secretary-Treasurer of the Missouri Valley Veterinary Association, announces that the next meeting will be held at the Elks Club in Omaha, Neb., July 13th to 15th. Several prominent veterinarians stopping off enroute to the A. V. M. A. meeting at Portland will contribute to the program, including Dr. J. N. Frost of Cornell University, Dr. E. L. Stubbs of the Pennsylvania B. A. I., Dr. A. Eichhorn of Pearl River, N. Y., Dr. W. S. Gochenour of the U. S. B. A. I., Washington, D. C., Dr. R. R. Dykstra, Dean of the Kansas State Veterinary College, Dr. C. J. Norden, President of the Nebraska State Association, Dr. C. J. Scott, President of the Iowa Association, Dr. J. G. Ferneyhough, State Veterinarian of Virginia, Senator R. C. Mills, the veterinarian in the Iowa Senate, Dr. E. A. Cahill of Zionsville, Ind.

In connection with this meeting, Dr. B. W. Conrad, President of the K. C. V. C. Alumni Association, announces that there will be a meeting of that organization on July 14th.

WISCONSIN SUMMER MEETING

Dr. O. H. Eliason, Secretary of the Wisconsin Veterinary Medical Association, announces that the summer meeting will be held at Eau Claire, July 14th, 15th and 16th. Dr. Thos. Wrigglesworth is chairman of the local committee and extended the invitation to meet in that city. Arrangements are being made for interesting clinical material, and some exceptionally good entertainment features have been planned. A detailed program will be mailed to any veterinarian interested.

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FOR SALE—WANTED

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BETTER PRINTING for less money. Send for free samples of letterheads, envelopes, circulars, booklets, cards, etc. They will save you money. Fantus Co., 525 So. Dearborn St., Chicago.

FOR SALE—Good mixed practice in Northwestern Pennsylvania town of 4,000. Horses, cattle, dogs. Large territory. Six paved roads. No competition. Introduction given. Equipment, drugs and some instruments. Reasonable for quick sale. Address 834, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

PASTEUR VACCINE LABORATORIES' World Renowned Anthrax and Blackleg Vaccines. Salesmen wanted; commission basis. Write to United States and Canadian General Agent: Charklian, 500 Fifth Avenue, New York City.

FOR SALE—One of the best practices in South Dakota. Property and practice. Must sell soon. Can be handled without much money. Address 832, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

FOR SALE—Veterinary library, 39 volumes, including Kimball's State Board Questions and Answers, Merillat's Animal Dentistry, Wyman's Diagnosis of Lameness, Malkmus' Clinical Diagnosis, Crocker's Postmortem Technic, Croker's Mastitis of Cow, Frohner's Therapeutics, Satterlee's Human Embryology, Vaughn's Types of Live Stock, McConnell's Pathology, Botany for Agricultural Students, Smith's Elementary Chemistry and Outline, Plummer's Practical Organic and Bio-Chemistry, Kellogg's Economic Zoology and Entomology, Frohner's Veterinary Pathology, Vol. I and II, Merillat's Principles of Veterinary Surgery, Albrechtsen's Sterility of Cows, Reeks' Colics of the Horse, Salmon's Diseases of Poultry, Steffen's Special Veterinary Therapy, Special Equine Therapy, Special Cattle Therapy, Saunders' Rabbit and Cat Diseases, DeVine's Bovine Tuberculosis, Hunting's Horseshoeing, Hobday's Anesthesia and Narcosis of Animals, Campbell's Springtime Surgery, Merillat's Wound Treatment, Campbell's Colics and Their Treatment, Kaupp's Poultry Diseases, Kinsley's Swine Diseases, Baker's Sheep Diseases, Law's Veterinary Medicine, 5 volumes. Price for entire lot, $19.00 net. Address Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

WANTED—Back numbers of Veterinary Medicine for March, 1925. Subscriptions extended one month for each copy received. Address Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

WANTED—Position by graduate veterinarian with special training in small animal and dairy work. Desires position as partner or assistant. Address 833, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

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Manual of Poisonous Plants

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FOR DOGS

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Indispensable for physical examinations.
Necessary to interpretation of the main functional symptom of diseases in dogs.

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2 sleeves $49.50
Complete Aneroid Instrument with
2 sleeves 35.50
Sleeves only (large or small)..... 8.00

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Three out of six applicants for state veterinary licenses in Idaho were approved by the state examining board, May 13th. Those licensed are: A. H. Mines of Downey; William Trueman of St. Maries; H. M. Sanborn of Post Falls. They were licensed under a provision of a 1925 legislative act which extends from January 1, 1922, to January 1, 1926, the time in which veterinarians who have practiced ten years in the state may be licensed without examination. Members of the examining board are Dr. Herbert H. Groome of Twin Falls, Dr. E. H. Ikard of Gooding, and Dr. Ray B. Hurd of Payette.

"TURN YOUR HOGS INTO GOLD"

The above is the title of an attractive booklet distributed by the Corn States Serum Co., Omaha, Nebraska, for veterinarians to give to their clients, the name of the practitioner being stamped in gold on the cover. It contains the prize letters written by hog raisers in the contest conducted by the Corn States company last fall, also a discussion of veterinary education and some remarks on the proper place of the county agent. Practitioners will find this booklet an effective and ethical means of publicity on the subject of vaccination against hog cholera and a boost for veterinary practice in general.

HORSE ASSOCIATION ISSUES INTERESTING LEAFLETS

Leaflet No. 142, issued by the Horse Association of America, Union Stock Yards, Chicago, is a report given by the Jackson Storage & Van Co., of Chicago, showing the advantages of using horses for short hauls.

Another leaflet tells about "Grover," a horse that for 22 years and 2 months traveled the same route for Borden's Farm Products Co., of Chicago. This faithful animal was given a party on his thirtieth birthday and pensioned to a life of hay and oats. During his long service, Grover drew a milk wagon more than 40,000 miles and delivered over 12,000,000 quarts of milk and cream. He was bought in 1903, when seven years old, weighed 1325 pounds and cost $150. At the time of his retirement, he weighed 1350 pounds. Horses of equal merit are now selling for $175 to $200.

The Borden company are now using 820 horses, for which they buy nearly 5,000,000 pounds of hay, more than 4,500,000 pounds of oats and nearly 800,000 pounds of mixed feed each year. Their shoeing bill for 1924 amounted to $58,242.40.

Dr. M. F. Wilkinson, Utica, N. Y., reports that the Central New York Kennel Club recently held a large and successful A. K. C. show at Utica. About 350 dogs were entered, coming from all parts of the country. Even the noted Pinscher from Vermont, who trailed and discovered Woodward, was present. Dr. Wilkinson states that such shows are an indication that the public is becoming more interested in breeding good dogs, which adds to the pleasure and interest taken in them by their owners, and incidentally is of benefit to the veterinarian.

Dr. C. P. Fitch, Secretary-Treasurer of the Minnesota State Veterinary Medical Association, has announced the program for the semi-annual meeting and short course to be held at University Farm, St. Paul, Minn., July 15th and 16th. Among those who will present papers and addresses, conduct clinics, etc., are Dr. W. J. Embree of Chicago, Dr. W. J. Lentz of the University of Pennsylvania, Dr. L. Van Es of the University of Nebraska, Dr. W. F. Guard of the Iowa State College, Dr. N. S. Mayo of Chicago, Dr. V. A. Moore of the New York State Veterinary College, Dr. R. R. Dykstra of the Kansas State Agricultural College, Dr. J. N. Frost of the New York State Veterinary College. An extensive and varied program has been prepared covering horse, cattle, swine, small animal and poultry practice.

Dr. P. Malcolm, Chief of the Iowa Division of Animal Industry, announces that the next veterinary medical examination in that state will be held in Des Moines, Iowa, July 7th and 8th.

Dr. R. A. Lantz has located at Denison, Iowa. He was formerly at Audubon, Ia.

Dr. Harry B. Belmar was added to the force of the board of health of St. Joseph, Mo., as a dairy inspector, May 14th. Dr. Belmar is a graduate of the Chicago Veterinary College, class of 1915. He was employed for a time as meat inspector in the U. S. B. A. I., and of late has been in private practice.

Illinois veterinarians of Iroquois and Kankakee counties met at Watseka, Ill., May 12th, and organized the Eastern Illinois Veterinary Medical Association with twenty-two members. Dr. D. C. Martin of Kankakee was chosen president; Dr. Hugh Herron of Watseka, vice president; Dr. O. F. West of Sheldon, secretary-treasurer.

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Dr. E. R. Forbes reported that Coryell county, Texas, was overrun with rats during March and April. Millions of the rodents covered thousands of acres, destroying all early crops and then going on the ranges where they destroyed practically all of the forage. Cattlemen were compelled to seek new range land in other counties and in Kansas.

According to Dr. N. F. Williams, State Veterinarian, poisoning resulting from the eating of oak buds and leaves has caused considerable death loss among cattle, sheep and goats in a dozen Southwest Texas counties. In some instances whole flocks of sheep and goats died. It is stated that the condition is not uncommon when there are no winter rains to make spring grass and weeds, and in particularly dry times the losses are heavier.

A milk-for-health film, being made by the United States Department of Agriculture, features Walter Johnson, pitcher for the 1924 World's Champions, as a perfect example of what the milk pitcher does for the baseball pitcher. This part of the picture was made just prior to the opening game of the 1925 season at the American League Park, Washington, D. C.

A new law recently passed in Missouri provides that when 70 per cent of the cattle owners of any county have their herds tuberculin tested or when they sign petitions asking for the testing of all cattle in the county, the state veterinarian is authorized to order the test applied to all cattle in the area involved.

Dr. and Mrs. B. B. Binnall, Pierson, Iowa, announced the birth of a daughter, weight six and one-half pounds, named Audrey Faucheon, May 4th.

Dr. and Mrs. A. H. Williams, Williams, Iowa, are entertaining a new arrival at their home in the person of a daughter born March 19th, named Marilyn.

Dr. R. S. Beattie, formerly at San Antonio, Texas, has accepted a position with the Live Stock Sanitary Service of Maryland and is stationed at Baltimore.

Dr. Earl E. Fuller has moved from Tecumseh to Richland, Kan.

The summer meeting of the South Carolina Association of Veterinarians will be held at Greenwood, S. C., July 14th and 15th. Dr. M. R. Blackstock, Spartanburg, S. C., Secretary of the association, states that a good program has been prepared and all members are urged to attend. A number of visitors are also expected, and a good time is in store for all who will be present.

Dr. M. H. Doller recently resigned as assistant state veterinarian of Kentucky and has located for practice at Danville, Ky.

Dr. E. A. Buxton, practitioner and also mayor of Vinton, Iowa, is one of ten Benton county veterinarians engaged in testing the county's herds for tuberculosis. He stated the work would probably be completed some time in August. The preliminary test revealed only about 1.9 per cent reactors. Dr. Buxton states that farmers of the county will gain about $10,000 next year because of the testing.

Dr. Charles G. Lamb, State Veterinarian of Colorado, has been granted authority by the board of stock commissioners to pay out of the state stallion fund not to exceed $700 towards premiums in the horse division of the Colorado State Fair this year. Fees collected from stal-

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lion licenses make up this fund, which the law provides shall be used in encouraging the breeding of purebred horses in Colorado.

Dr. H. A. Wilson, State Veterinarian of Missouri, broadcasted an address on tuberculosis control in livestock over the radio at Jefferson City, April 24th.

Dr. Lyman D. Brown was recently elected mayor of Hamilton, Mo.

The National Highway Veterinary Association was formed at Paris, Ill., May 7th, and the following officers elected: Dr. B. H. Saxton, Kansas, Ill., president; Dr. C. F. Behner, Marshall, Ill., vice president; Dr. W. P. Shoaff, Paris, secretary-treasurer. Fifteen veterinarians were present, also the farm adviser, Mr. Enos Waters. Regular meetings will be held each month. Dr. J. S. Koen of Bloomington, Ill., addressed the gathering and assisted in forming the organization.

Another organization meeting, in which Dr. Koen took part, was held at Olney, Ill., May 8th, when the Southeastern Illinois Veterinary Medical Association was formed, with the following officers: Dr. C. E. Lucas, Olney, president; Dr. H. R. Dennis, Robinson, vice president; Dr. H. A. Smothers, Mt. Carmel, secretary-treasurer.

Dr. A. S. Fisk, Greeley, Colo., Secretary of the Colorado Veterinary Medical Association, has announced that the summer meeting of the organization will be a two-day session at Pueblo, Colo., August 11th and 12th. A practitioners' program is being prepared, and a banquet will be given on the first day. Visiting veterinarians are welcome.

Dr. H. F. Crooks, formerly of Leeton, Mo., has purchased the practice of Dr. H. P. Gray at Chilhowee, Mo. Dr. Gray went on a farm near Mansfield, Mo.

Dr. F. J. Olbrich has changed his location from Owatonna, Minn., to Philadelphia, Pa.

Dr. Charles Thornberg, 68, of Avintaquin, Utah, died May 10th following an illness covering two years. He was born in Nebraska and went to Utah twenty-five years ago. He is survived by his widow and five children.

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Dr. G. P. Mayer has moved from Elk Rapids to Marquette, Mich.

Dr. Ed. Pugh, formerly at Missouri City, Mo., is now located at Liverpool, Texas, where he has purchased a fruit and stock farm. He states he has a nice fig orchard and will plant orange trees next fall. He is located thirty miles from Galveston, midway between Houston and Galveston.

CONESTOGA CLUB MEETING

The annual shad supper and regular monthly meeting of the Conestoga Veterinary Club was held at Lancaster, Pa., May 21st.

The regular meeting opened at 5 p. m., with a very interesting lecture by Dr. Geo. A. Dick on the principles of breeding. This lecture was the final one of a series prepared and conducted by the Veterinary Extension School of the University of Pennsylvania.

Supper followed the regular meeting with more than fifty members and guests present. Dr. Jos. Johnson acted as toastmaster and introduced Mayor F. C. Musser of Lancaster, who extended a hearty welcome to all present. Mayor Musser pointed out the important role that veterinarians play in community health work and incidentally paid the profession a number of compliments.

Among the guests were Dr. T. E. Munce, State Veterinarian and Chief of the State B. A. I., Dr. H. R. Church, Deputy Chief of the Bureau, and Dr. S. E. Bruner, in charge of tuberculosis eradication for the state, Drs. C. J. Marshall, George A. Dick and E. L. Stubb of the University of Pennsylvania, Hon. E. P. Brown, Member State Legislature from Susquehanna county, F. S. Bucher, Extension Representative of the Lancaster County Agricultural Association, and E. A. Seamon of the State Bureau of Markets.

Dr. Munce spoke briefly on the activities of the State B. A. I.; Dr. S. F. Bruner on the progress of tuberculosis eradication in the state; and Hon. E. P. Brown on the favorable attitude of the State Legislature to this work. Dr. Church urged the guests and members to encourage horse breeding. Dr. C. J. Marshall recalled some interesting experiences as former State Veterinarian, and Dr. Stubbs favored us with a few remarks on "fowl pest."

The supper was enjoyed by all present with expressions of satisfaction and the desire of being present at the next one.

Henry S. Weber, Secretary
Lancaster, Pa.